HIBISCUS BLVD. SLUDGE SITE (SITE #7)
~~FLD 980556518~~
PRELIMINARY ASSESSMENT REASSESSMENT
FLD984171017

35006

A. SITE DESCRIPTION. The Hibiscus Blvd. Sludge Site is located on the north side right-of-way of Hibiscus Blvd., Melbourne, Brevard County, Florida. This site accepted municipal sludge which was contaminated with electroplating wastes. The site accepted sludge from 1965 to 1979 (Figs. 1,2) [3,15,17].

B. DESCRIPTION OF HAZARDOUS CONDITIONS, INCIDENTS AND PERMIT VIOLATIONS. Hibiscus Blvd. is one of 8 sites where the City of Melbourne disposed of digested municipal sludge from the D. B. Lee and Grant Street wastewater treatment plants by landspreading [3,15]. McClenon's Property (Site #3) had a Preliminary Assessment (PA) written in 1987 [16]. The other 7 sites had PAs written in 1982 which were unobtainable [3].

The City of Melbourne provided sludge quality analysis data for both treatment plants for the period of 8/84 through 7/88. No data was found for the period of landspreading (1965-1979). Analyses from the D. B. Lee Plant in 1984 listed metals values as high as: Cadmium--10 mg/kg, Copper--4799 mg/kg, Lead-- 598 mg/kg, Nickel--548 mg/kg, and Zinc--1216 mg/kg [15]. Chromium was also noted in the original Notification of Hazardous Waste Site form which was sent to EPA by the City [3] and is reportedly used by FAR-MAC Plating Co. [15,20]. The City reported in 12/88 that Advanced Board Circuitries contributed copper to the D. B. Lee Plant, while FAR-MAC Plating contributed nickel to the Grant St. plant during the period of operation [15].

In an FDER inspection report of Advanced Board Circuitries from 12/17/81, the District inspector noted ". . . concern regarding the metals (Copper--5 ppm and Lead--2 ppm) being discharged into the sanitary sewer." The discharge rate was noted at 300 gallons of water per minute [19].

A 1984 FDER report noted that FAR-MAC Plating's chrome and nickel plating operation generates copper cyanide, chromium, and nickel waste that is recycled. The continuous flow chrome rinse had been replaced by a recycled rinse in 1983-84. The continuous flow rinse for nickel was still in use [20].

All of the above listed metals plus cyanide and various organic compounds are commonly found in the wastestreams of electroplating processes [5]. Chromium and cyanide were not included in the sludge analyses of the 2 treatment plants [15]. These metals could contaminate the air, soil, water, and in some cases could enter the human food chain. Metals incorporated in the sludge can have detrimental effects which limit the amount of sludge which can be applied to cropland or on areas of unrestricted human access. Data indicate that sludge containing lead, when applied to cropland, may increase the lead concentration in crops grown on acid soils [5].

No groundwater or soil samples are known to have been collected from the site to date.

C. RCRA STATUS. This site has no RCRA status.

D. NATURE OF HAZARDOUS MATERIALS. Copper is toxic in low concentrations to many aquatic organisms [13] and can cause Wilson's disease in persons with this recessive genetic trait. The primary route of entry for copper is inhalation [7]. Nickel is a human skin sensitizer. Nickel compounds taken in by inhalation and ingestion have been linked to cancers [7]. Chromium compounds and lead are known and suspected carcinogens and are used in the electroplating industry [4,5]. Hexavalent chromium is corrosive and a potent human skin sensitizer [4,5,7,12]. Lead is bioaccumulative, toxic and persistent [4,5,7]. Cyanide, a common component of electroplating wastewaters, has toxic effects on the liver and kidneys [5,12].

E. ROUTES OF CONTAMINATION. Groundwater and surface water are potential routes of contamination. Direct contact is another potential route.

F. POSSIBLE AFFECTED POPULATION AND RESOURCES. A surficial aquifer system, consisting of unconsolidated sediments of upper Miocene to Holocene Age, exists in this area of Brevard County. It contains the water table (15 feet below land surface) and water within it is under mainly unconfined conditions; but beds of low permeability may cause semiconfined conditions in its deeper parts. The aquifer is composed of fine to medium sand, coquina (limerock), sandy shell marl, gray to greenish clay and silty shell. The aquifer consists of two zones (water table zone and shallow rock zone) that act as a single permeable hydrogeologic unit. The shallow rock zone of the aquifer, which overlies the Hawthorn Formation, is composed of limestone and found approximately 80 feet bls in this area. The surficial aquifer is tapped by many municipal, public, and private systems for potable water supplies. The larger systems tap the shallow rock zone of the surficial aquifer [1,2,21,23].

The Floridan aquifer, a thick sequence of carbonates (limestones and dolomites), is found approximately 250 feet bls. The Floridan exists under confined (artesian) conditions in Brevard County. Due to the Floridan's high chloride content (250 mg/l), this aquifer is used primarily for irrigation and stock watering [1,2,21,23].

The City of Palm Bay's Port Malabar Well Field taps the surficial aquifer with casing depths from 50 to 90 feet. This well field serves 11,808 connections, but is greater than 4 miles from the site [6,9]. There are approximately 535 private wells within 3 miles of the site which tap the surficial aquifer and are outside of municipal service

areas [22]. The City of Melbourne takes its water from Lake Washington. The intakes are more than 4 miles from the sludge site [6,8]. The closest potable well is less than 2 miles from the site [6,22].

The Crane Creek Drainage Ditch crosses Evan's Road about 100 feet south of Hibiscus Blvd. This ditch flows into Crane Creek which flows into the Indian River approximately 4 miles from the site. Brevard County is home to several endangered and threatened species. Some of the birds (Woodstork, etc.) are known to inhabit the Crane Creek area. The Indian River is Critical Habitat for the West Indian Manatee [6,26]. Copper and several other electroplating waste components have potential toxic effects on freshwater and saltwater organisms [5,12,13].

G. RECOMMENDATIONS AND JUSTIFICATIONS. No groundwater or soil samples have been collected to date. Highly toxic and potentially carcinogenic contaminants may be present at the site. We recommend that soil and groundwater samples be collected and analyzed for priority pollutant contaminants.

Since highly toxic/persistent contaminants may be present at the site, a shallow unconfined aquifer exists, several endangered species are nearby, and numerous private wells are present nearby, we recommend a medium priority for CERCLA Site Screening Investigation.

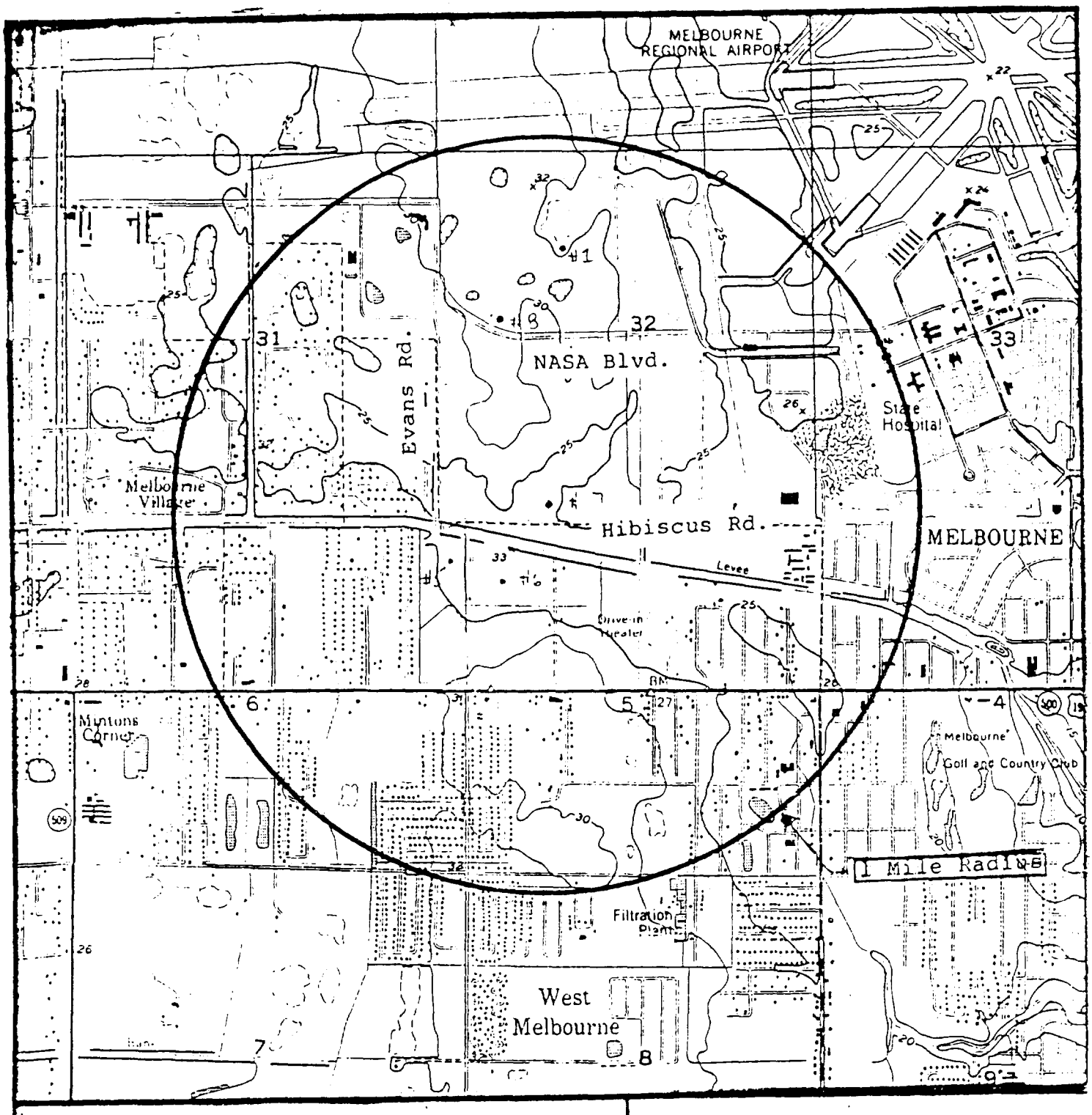
ATTACHMENT A
SITE INSPECTION SUMMARY

FLD 980556518

SITE NAME: HIBISCUS BLVD. SLUDGE SITE (Site #7)

Date (Agency)	Sample Type	ANALYSIS VOC	SVOC	P/P	MET	Comments:
09/22/88 (FDER)						On-site reconnaissance inspection identified probable site owner and verifie location of the site [14].

Key: Agency FDER = Florida Department of Environmental Regulation.



SITE LOCATION MAP

Hibiscus Road Sludge Site
(Site #7) Melbourne, Brevard Co.

USGS QUAD Melbourne, West, Fl

Figure 1

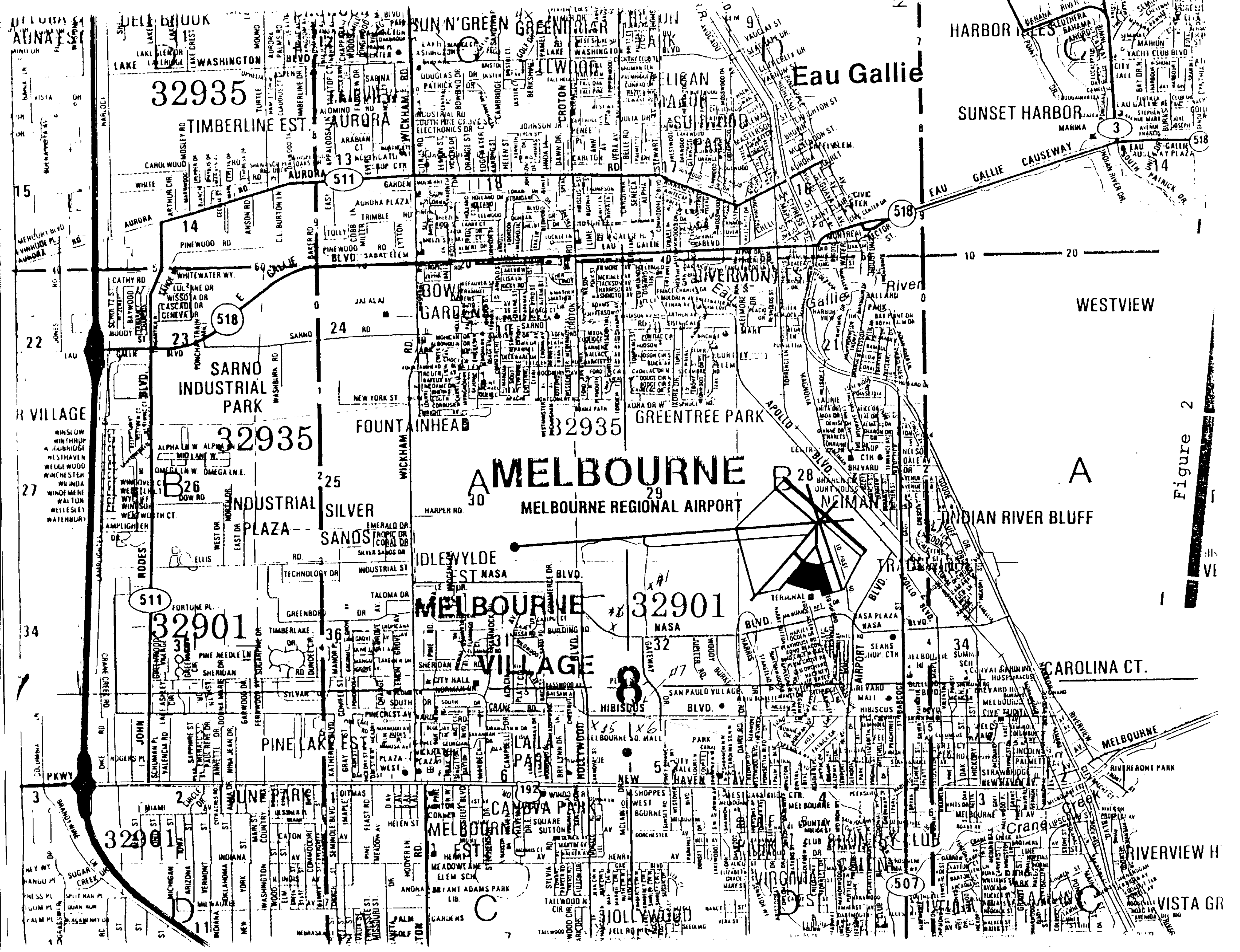

Eau Gallie
HARBOR ISLES
SUNSET HARBOR
EAU GALLIE CAUSEWAY
WESTVIEW
32935
TIMBERLINE EST.
AURORA
SUN N' GREEN
GREENBRIAR
PELICAN
SARNO INDUSTRIAL PARK
FOUNTAINHEAD
GREENTREE PARK
RIVERMONT
BOWE GARDENS
MELBOURNE
MELBOURNE REGIONAL AIRPORT
INDIAN RIVER BLUFF
INDUSTRIAL PLAZA
SILVER SANDS
IDLEWYLDE EST
MELBOURNE VILLAGE
32901
CAROLINA CT.
PINE LAKE EST
JUNE PARK
CANOVA PARK
LAILA PARK
MELBOURNE EST
HOLLYWOOD
VIRGINIA
RIVERVIEW H
VISTA GR
RIVERFRONT PARK
Crane Creek
NASA BLVD.
HIBISCUS BLVD.
511
518
192
507
3

Figure 2

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT REASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

IDENTIFICATION	
01 STATE	02 SITE NUMBER
FL	D 980556518

II. SITE NAME AND LOCATION

01 SITE NAME(Legal, common or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Hibiscus Blvd. Sludge Site (Site #7)	North side of Hibiscus Blvd.				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Melbourne (Figs. 1,2) [3,15,17]	FL	32901	Brevard	09	11

09 COORDINATES	LATITUDE	LONGITUDE
	28°05'08" N	80°35'07" W [6]

10 DIRECTIONS TO SITE(Starting from nearest public road):
From Hollywood Blvd. take a right (east) onto Hibiscus Blvd. The sludge was spread on the north side of Hibiscus Road (from Hollywood Blvd. to Gateway Drive) (Figs. 1,2) [3,14].

RESPONSIBLE PARTIES

01 OWNER(If known)	02 STREET(Business, mailing, residential)		
City of Melbourne	900 East Strawbridge Ave.		
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 TELEPHONE NUMBER**
Melbourne	FL	32901	(407) 727-2900
07 OPERATOR(If known and different from owner)	**08 STREET(Business, mailing, residential)**		
City of Melbourne [3]	900 East Strawbridge Ave.		
09 CITY	**10 STATE**	**11 ZIP CODE**	**12 TELEPHONE NUMBER**
Melbourne	FL	32901	(407) 727-2900

13 TYPE OF OWNERSHIP(Check one)
__ A. PRIVATE __ B. FEDERAL: _____ (Agency Name) __ C. STATE __ D. COUNTY _X_ E. MUNICIPAL
__ F. OTHER: _____ (Specify) __ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE(Check all that apply)
__ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR) _X_ B. UNCONTROLLED WASTE SITE(Cercla 103 c) DATE RECEIVED: 6 / 5 / 81 (MONTH DATE YEAR) __ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
_X_ YES DATE 09 /22 / 88 (MONTH/DAY/YEAR)
__ NO
[14]

BY(Check all that apply)
__ A. EPA __ B. EPA CONTRACTOR _X_ C. STATE __ D. OTHER CONTRACTOR
__ E. LOCAL HEALTH OFFICIAL __ OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS(Check one)	03 YEARS OF OPERATION		
__ A. ACTIVE _X_ B. INACTIVE __ C. UNKNOWN [3]	1965 (BEGINNING YEAR)	1979 [3] (ENDING YEAR)	__ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED--
The City of Melbourne landspread digested municipal sludge containing electroplating wastes at this site. Heavy metals, present in significant quantities, have been found in the digested sludge [3,15,20].

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION--Heavy metals (cadmium, chromium) found in the electroplating sludge are highly toxic and known or suspected carcinogens. There are numerous wells which tap the unconfined surficial aquifer near the site. Residents using these wells and people traversing the area may be exposed to highly toxic and carcinogenic substances [3-5,6,7,12,22].

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION(Check one. If high or medium is checked, complete Part 3-Description of Conditions)
__ A. HIGH (Inspection required promptly) _X_ B. MEDIUM (Inspection Required) __ C. LOW (Inspect on time available basis) __ D. NONE (No further action needed, complete disposition form)

VI. INFORMATION AVAILABLE FROM

01 Contact	02 OF(Agency Organization)		03 Telephone Number
Eric S. Nuzie	FDER/BWC		(904)488-0190
04 Person Responsible for Assessment	**05 Agency**	**06 Organization**	**07 Tel. No.**	**08 Date**
Brian Moore	FDER	BWC	(904)488-0190	12 / 21 / 88 (Mo. DAY YEAR)

EPA FORM 2070-12(7-81)

HIBISCUS BLVD. SLUDGE SITE (Site #7)

References

Reference Number	Description of Reference
1.	Brown, D. W., W. E. Kenner, J. W. Crooks, and J. B. Foster. 1962. Water Resources of Brevard Co., Florida. RI No. 28. USGS.
2.	City of Palm Bay. 1988. Comprehensive Plan - Potable Water Element.
3.	Environmental Protection Agency. 6/5/81. Notification of Hazardous Waste Site.
4.	Sax, N. Irving. 1984. Dangerous Properties of Industrial Materials, Sixth Edition. Van Nostrand Reinhold Co.
5.	Environmental Protection Agency. 1979. Development Document for Existing Source Pretreatment Standards for the Electroplating Point Source Category.
6.	Topographic Maps. USGS. 1:24,000 (Melbourne, East and Melbourne, West Quads).
7.	Sittig, M. 1976. Toxic Metals--Pollution Control and Worker Protection. Noyes Publications, Park Ridge, NJ.
8.	Healy, H. 1977. Public Water Supplies of Selected Municipalities in Florida, 1975. WRI 77-53. USGS.
9.	Reece, Jack. Oct. 1988. GDU - Port Malabar Well Field Information.
10.	Lubinski, M. 12/22/88. Memo regarding Endangered Species.
11.	Appendix. Unlisted (Characteristic) Hazardous Wastes (40 CFR Part 261, Subpart C) and Lists of Hazardous Wastes (40 CFR Part 261, Subpart D).
12.	Sittig, M. 1985. Handbook of Toxic and Hazardous Chemicals and Carcinogens, Second Edition. Noyes Publications, Park Ridge, NJ.
13.	E.P.A. 1986. Quality Criteria for Water - 1986.
14.	Moore, B. 9/22/88. Windshield Survey.
15.	City of Melbourne. 12/9/88. Sludge Analyses from 8/84 to 7/88 and related information.
16.	FDER. 9/25/87. Preliminary Assessment - McClenon's Property.
17.	Brevard County Appraiser's Office. 12/13/88. Conversation Record.
18.	Miller, E. 12/14/88. Conversation Record.
19.	Miller, C. 12/17/81. FDER Hazardous Waste Compliance Report.

References

Reference Number	Description of Reference
20.	Sawicki, T. A. 4/4/84. FDER Hazardous Waste Compliance Report.
21.	Brevard County. 1988. Draft Comprehensive Plan - Potable Water Element.
22.	Moore, B. to E. Nuzie. 12/21/88. Memo on Potable wells within 3 miles of the site.
23.	Toth, D. J. 1/88. Salt Water Intrusion in Coastal Areas of Volusia, Brevard, and Indian River Counties.
24.	NUS Corp. 3/87. Hazard Ranking System: Data Collection and Documentation Techniques for HRS Scoring of Hazardous Waste Sites.
25.	USEPA. 3/88. Region IV Preremedial Program Guidance.

HAZARD RANKING SYSTEM SCORING SUMMARY

FOR

HIBISCUS BOULEVARD SLUDGE SITE (SITE #7)
EPA SITE NUMBER ~~FLD980556518~~ FLD984171017
MELBOURNE
BREVARD COUNTY, FL
EPA REGION: 4

SCORE STATUS: IN PREPARATION

SCORED BY BRIAN MOORE
OF FDER
ON 12/28/88

DATE OF THIS REPORT: 01/01/80
DATE OF LAST MODIFICATION: 01/01/80

GROUND WATER ROUTE SCORE	:	47.76
SURFACE WATER ROUTE SCORE	:	8.73
AIR ROUTE SCORE	:	0.00
MIGRATION SCORE	:	28.06

HRS GROUND WATER ROUTE SCORE - Surficial aquifer

	CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1.	OBSERVED RELEASE	NO	0	0
2.	ROUTE CHARACTERISTICS			
Refs.1,6,21, 23	DEPTH TO WATER TABLE	5 FEET		
	DEPTH TO BOTTOM OF WASTE	0 FEET		
	DEPTH TO AQUIFER OF CONCERN	5 FEET	3	6
Ref.24	PRECIPITATION	56.0 INCHES		
	EVAPORATION	48.0 INCHES		
	NET PRECIPITATION	8.0 INCHES	2	2
Refs.1,6,21, 23	PERMEABILITY	1.0X10-4 CM/SEC	2	2
	PHYSICAL STATE (sludge)		3	3
	TOTAL ROUTE CHARACTERISTICS SCORE:			13
Refs.2,3, 15	3. CONTAINMENT (pile uncovered, no liner)		3	3
4.	WASTE CHARACTERISTICS			
Refs.3,15,20	TOXICITY/PERSISTENCE:CADMIUM			18
Ref.25	WASTE QUANTITY CUBIC YDS	2501 (assume maximum quantity)		
	DRUMS	0		
	GALLONS	0		
	TONS	0		
	TOTAL	2501 CU. YDS	8	8
	TOTAL WASTE CHARACTERISTICS SCORE:			26
5.	TARGETS			
Refs.2,6,21, 22,23	GROUND WATER USE		3	9
	DISTANCE TO NEAREST WELL	5955 FEET		
	AND	MATRIX VALUE	18	18
Refs.6,22	TOTAL POPULATION SERVED	2033 PERSONS		
	NUMBER OF HOUSES	535		
	NUMBER OF PERSONS	0		
	NUMBER OF CONNECTIONS	0		
	NUMBER OF IRRIGATED ACRES	0		
	TOTAL TARGETS SCORE:			27

GROUND WATER ROUTE SCORE (Sgw) = 47.76

HRS SURFACE WATER ROUTE SCORE- Crane Creek/Ditch

	CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
	1. OBSERVED RELEASE	NO	0	0
	2. ROUTE CHARACTERISTICS			
	SITE LOCATED IN SURFACE WATER	NO		
	SITE WITHIN CLOSED BASIN	NO		
Ref.6	FACILITY SLOPE	1.0 %		
	INTERVENING SLOPE	1.0 %	0	0
Ref.24	24-HOUR RAINFALL	4.0 INCHES	3	3
Ref.6	DISTANCE TO DOWN-SLOPE WATER	556 FEET	3	6
	PHYSICAL STATE (Sludge)	3		3
	TOTAL ROUTE CHARACTERISTICS SCORE:			12
	3. CONTAINMENT (pile uncovered,no liner/diking)			3
	4. WASTE CHARACTERISTICS			
Refs.3,15,20	TOXICITY/PERSISTENCE:CADMIUM			18
Ref.25	WASTE QUANTITY CUBIC YDS	2501 (assume maximum quantity)		
	DRUMS	0		
	GALLONS	0		
	TONS	0		
	TOTAL	2501 CU. YDS	8	8
	TOTAL WASTE CHARACTERISTICS SCORE:			26
	5. TARGETS			
Ref.6	SURFACE WATER USE		2	6
	DISTANCE TO SENSITIVE ENVIRONMENTS		0	0
Ref.6	COASTAL WETLANDS	15006 FEET		
	FRESH-WATER WETLANDS	NONE		
	CRITICAL HABITAT	8019 FEET		
	DISTANCE TO STATIC WATER	> 3 MILES		
	DISTANCE TO WATER SUPPLY INTAKE	> 3 MILES		
	AND	MATRIX VALUE	0	0
	TOTAL POPULATION SERVED	0		
	NUMBER OF HOUSES	0		
	NUMBER OF PERSONS	0		
	NUMBER OF CONNECTIONS	0		
	NUMBER OF IRRIGATED ACRES	0		
	TOTAL TARGETS SCORE:			6

SURFACE WATER ROUTE SCORE (Ssw) = 8.73

HRS AIR ROUTE SCORE

CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1. OBSERVED RELEASE	NO	0	0

2. WASTE CHARACTERISTICS

REACTIVITY:

MATRIX VALUE

INCOMPATIBILITY

TOXICITY

WASTE QUANTITY
- CUBIC YARDS
- DRUMS
- GALLONS
- TONS

TOTAL

TOTAL WASTE CHARACTERISTICS SCORE: N/A

3. TARGETS

POPULATION WITHIN 4-MILE RADIUS
- 0 to 0.25 mile
- 0 to 0.50 mile
- 0 to 1.0 mile
- 0 to 4.0 miles

DISTANCE TO SENSITIVE ENVIRONMENTS
- COASTAL WETLANDS
- FRESH-WATER WETLANDS
- CRITICAL HABITAT

DISTANCE TO LAND USES
- COMMERCIAL/INDUSTRIAL
- PARK/FOREST/RESIDENTIAL
- AGRICULTURAL LAND
- PRIME FARMLAND
- HISTORIC SITE WITHIN VIEW?

TOTAL TARGETS SCORE: N/A

AIR ROUTE SCORE (Sa) = 0.00

HAZARD RANKING SYSTEM SCORING CALCULATIONS
FOR
SITE: HIBISCUS BOULEVARD SLUDGE SITE (SITE #7)
AS OF 01/01/80

GROUND WATER ROUTE SCORE

ROUTE CHARACTERISTICS		13
CONTAINMENT	X	3
WASTE CHARACTERISTICS	X	26
TARGETS	X	27

= 27378 /57,330 X 100 = 47.76 = S1gw

SURFACE WATER ROUTE SCORE

ROUTE CHARACTERISTICS		12
CONTAINMENT	X	3
WASTE CHARACTERISTICS	X	26
TARGETS	X	6

= 5616 /64,350 X 100 = 8.73 = S1sw

AIR ROUTE SCORE

OBSERVED RELEASE 0 /35,100 X 100 = 0.00 = S1air

SUMMARY OF MIGRATION SCORE CALCULATIONS

	S	S02
GROUND WATER ROUTE SCORE (S1gw)	47.76	2281.02
SURFACE WATER ROUTE SCORE (S1sw)	8.73	76.21
AIR ROUTE SCORE (S1air)	0.00	0.00
S021gw + S021sw + S021air		2357.2
√ (S021gw + S021sw + S021air)		48.5
S1M = √ (S021gw + S021sw + S021air)/1.73		28.06

Hg with the manual cold-vapor method with a Coleman MAS-50 mercury analyzer. Tissue concentrations of Cu and Zn were determined with direct aspiration on a Perkin Elmer model 380 AA with an air-acetylene mixture. An HGA graphite furnace, model 400, was utilized for determining Ag, Cd, Cr, and Pb. Standard curves and spikes were made with Ricca 1000 mg/l stock solutions and the recoveries were greater than 85%.

The uncertainty associated with using bivalves for metal monitoring, because of the variability due to their size, sex and population differences was lessened by pooling individuals from a single sample site into one sample (Meeus-Verdinee, 1983). The pooled bivalve sample was needed in this study to overcome changes in phytoplankton variability and individual feeding rates (Quick and Blair, 1971; Mackay et al., 1975; Boalch et al., 1981; Latouche and Mix, 1982; Riisgard, 1984). The variation due to sex was deemed too small for separating individuals (Latouche and Mix, 1982), nor was depuration deemed necessary.

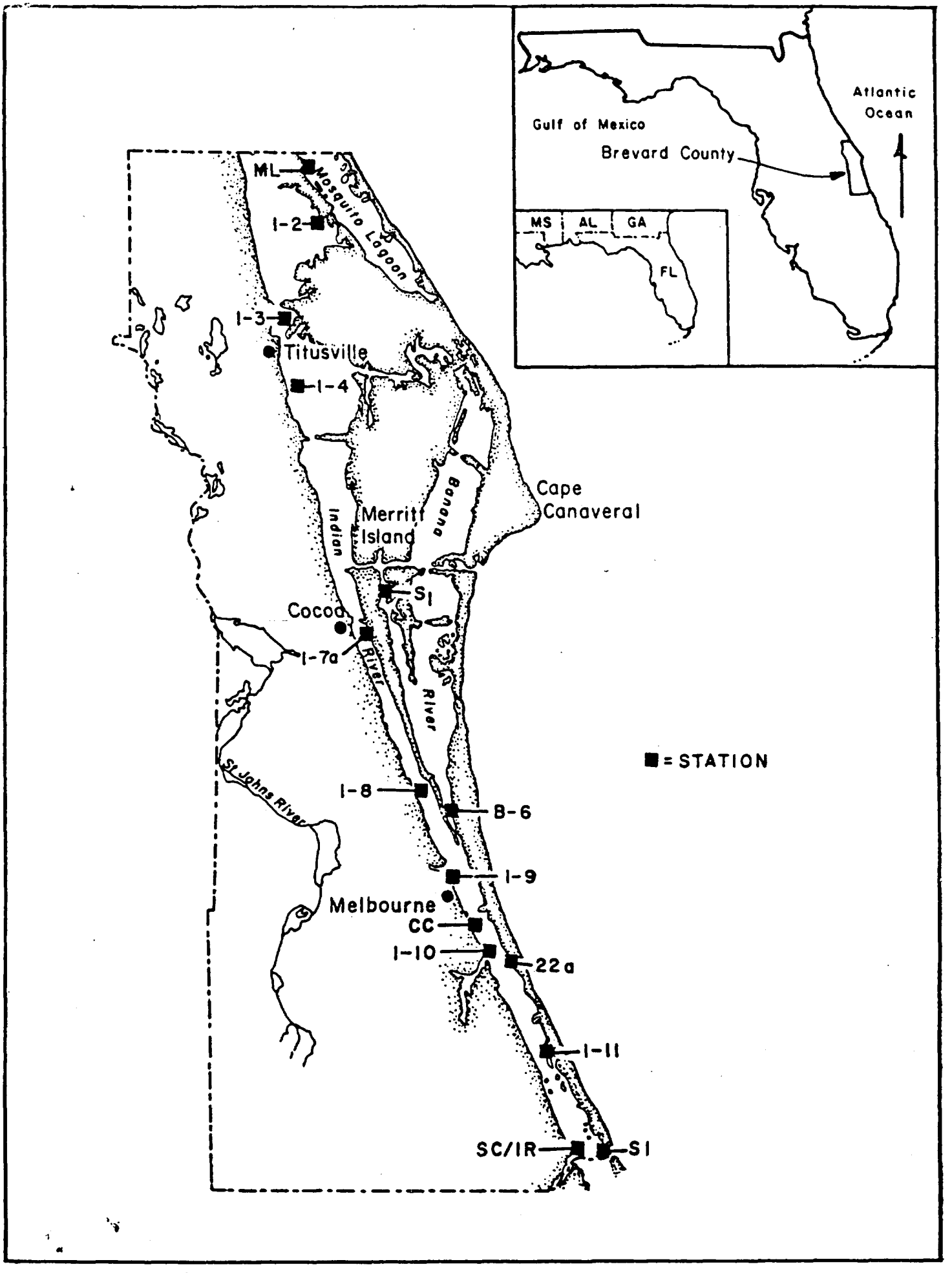
RESULTS

The results of this survey are summarized in Table 5. For the most part, the values are below the maximum metal concentrations reported elsewhere (Table 6). Those sites that were in close proximity to suspected pollutant discharges showed slightly elevated metal concentrations, notably Ag, Cu, Pb and Zn (stations CC, I-10, and B6), over what was considered background levels (stations ML and SI). Comparison of the data generated from the present survey with historical

TABLE 5

TRACE METALS IN *Mercenaria mercenaria* (mg metal/kg dry wt.)

STATION	Ag	Cd	Cr	Cu	Hg	Pb	Zn
ML	2.34	0.26	3.29	5.57	0.07	4.09	248.4
I-2	0.50	0.20	2.19	12.46	-.-	3.70	233.1
I-3	1.47	0.34	2.64	19.06	0.04	2.79	167.8
I-4	1.89	-.-	21.80	100.54	0.09	8.60	189.9
I-7a	1.83	0.05	4.23	8.72	0.98	6.38	157.9
I-8	2.09	0.32	1.24	40.46	0.32	8.11	256.8
I-9	3.57	0.22	5.75	28.39	0.02	4.57	170.7
CC	32.14	-.-	-.-	241.3	-.-	28.06	4588.8
I-10	9.24	0.03	2.90	41.02	0.62	4.61	257.5
22a	5.01	0.52	2.03	16.84	0.07	6.11	17.0
I-11	1.94	0.26	5.45	9.24	0.17	8.57	279.4
SC/IR	1.71	0.25	13.39	7.47	0.02	10.48	1207.6
SI	0.41	0.18	2.84	14.73	0.92	0.60	71.5
S-1	1.33	-.-	3.39	13.44	0.05	2.67	226.5
B-6	4.28	0.40	3.03	35.86	§0.02	9.08	225.2
n	15	12	14	15	13	15	15
X	4.65	0.25	5.30	39.67	0.26	7.23	553.2
S	7.92	0.14	5.60	60.70	0.35	6.41	1148.8
R	0.31-32.14	0.03-0.52	1.24-21.80	5.57-241.30	0.02-0.98	0.60-28.06	17.0-4588.8


Atlantic Ocean
Gulf of Mexico
Brevard County
MS
AL
GA
FL
ML
Mosquito Lagoon
I-2
I-3
Titusville
I-4
Indian River
Banana River
Merritt Island
Cape Canaveral
S1
Cocoa
I-7a
St Johns River
I-8
B-6
I-9
Melbourne
CC
I-10
22a
I-11
SC/IR
S1
■ = STATION

POOR LEGIBILITY

PORTIONS OF THIS DOCUMENT MAY BE UNREADABLE, DUE TO THE QUALITY OF THE ORIGINAL

TABLE 2. Stratigraphic Units of Brevard County, Florida

Geologic age	Stratigraphic unit	Approximate thickness (feet)	General lithologic character	Water-bearing properties
Recent Pleistocene	Pleistocene and Recent deposits	0-110	Fine to medium sand, coquina and sandy shell marl.	Permeability low due to small grain size, yields small quantities of water to shallow wells, principal source of water for domestic uses not supplied by municipal water systems.
Pliocene	Upper Miocene or *Pliocene deposits*	20-90	Gray to greenish gray sandy shell marl, green clay, fine sand, and *silty shell*.	Permeability very low, acts as confining bed to artesian aquifer, produces small amount of water to wells tapping shell beds.
Miocene	Hawthorn Formation	10-300	Light green to greenish gray sandy marl, streaks of greenish clay, phosphatic radiolarian clay, black and brown phosphorite, thin beds of phosphatic sandy limestone.	Permeability generally low, may yield small quantities of fresh water in recharge areas, generally permeated with water from the artesian zone. Contains relatively impermeable beds, that prevent or retard upward movement of water from the underlying artesian aquifer. Basal permeable beds are considered part of the Floridan aquifer.
Eocene	Ocala Group: Crystal River Formation	0-100	White to cream, friable, porous coquina in a soft, chalky, marine limestone.	*Floridan aquifer:* Permeability generally very high, yields large quantities of artesian water. Chemical quality of the water varies from one area to another and is the dominant factor controlling utilization. A large percentage of the ground water used in Brevard County is from the artesian aquifer. The Crystal River Formation will produce large quantities of artesian water. The Inglis Formation is expected to yield more than the Williston Formation. Local dense, indurated zones in the lower part of the Avon Park Limestone restrict permeability but in general the formation will yield large quantities of water.
	Ocala Group: Williston Formation	10-50	Light cream, soft, granular marine limestone, generally finer grained than the Inglis Formation, highly fossiliferous.	
	Ocala Group: Inglis Formation	70 +	Cream to creamy white, coarse granular limestone, contains abundant echinoid fragments.	
	Avon Park Limestone	285 +	White to cream, purple tinted, soft, dense chalky limestone. Localized zones altered to light brown or ashen gray, hard, porous, crystalline dolomite.	

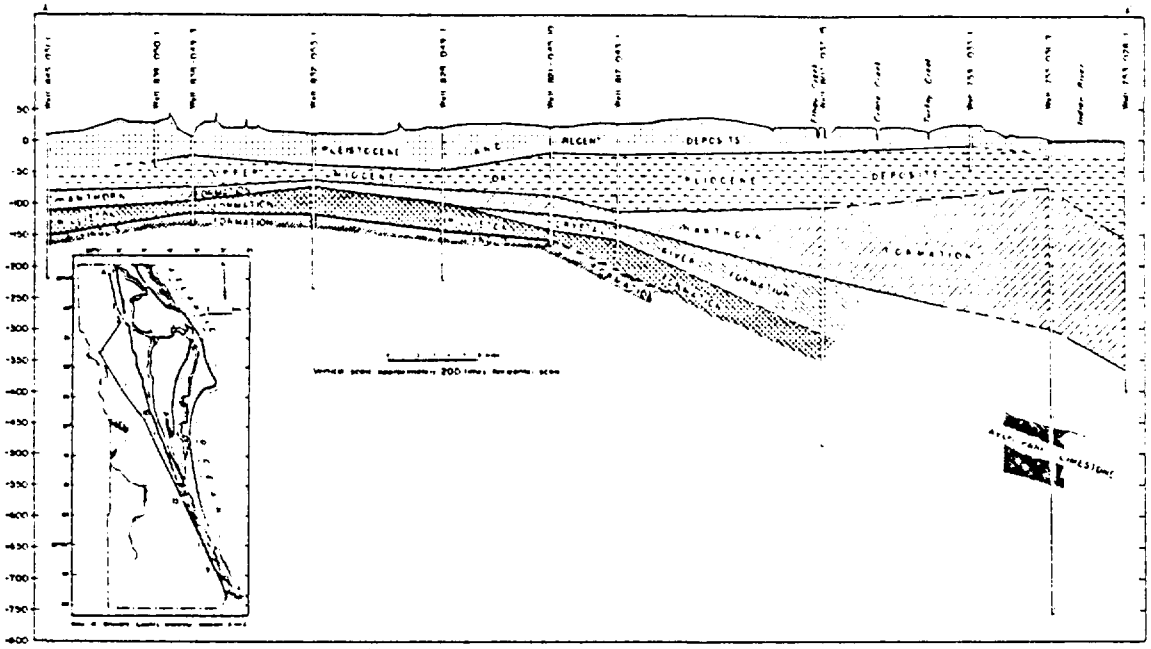


Figure 10. Geologic section A-A'.

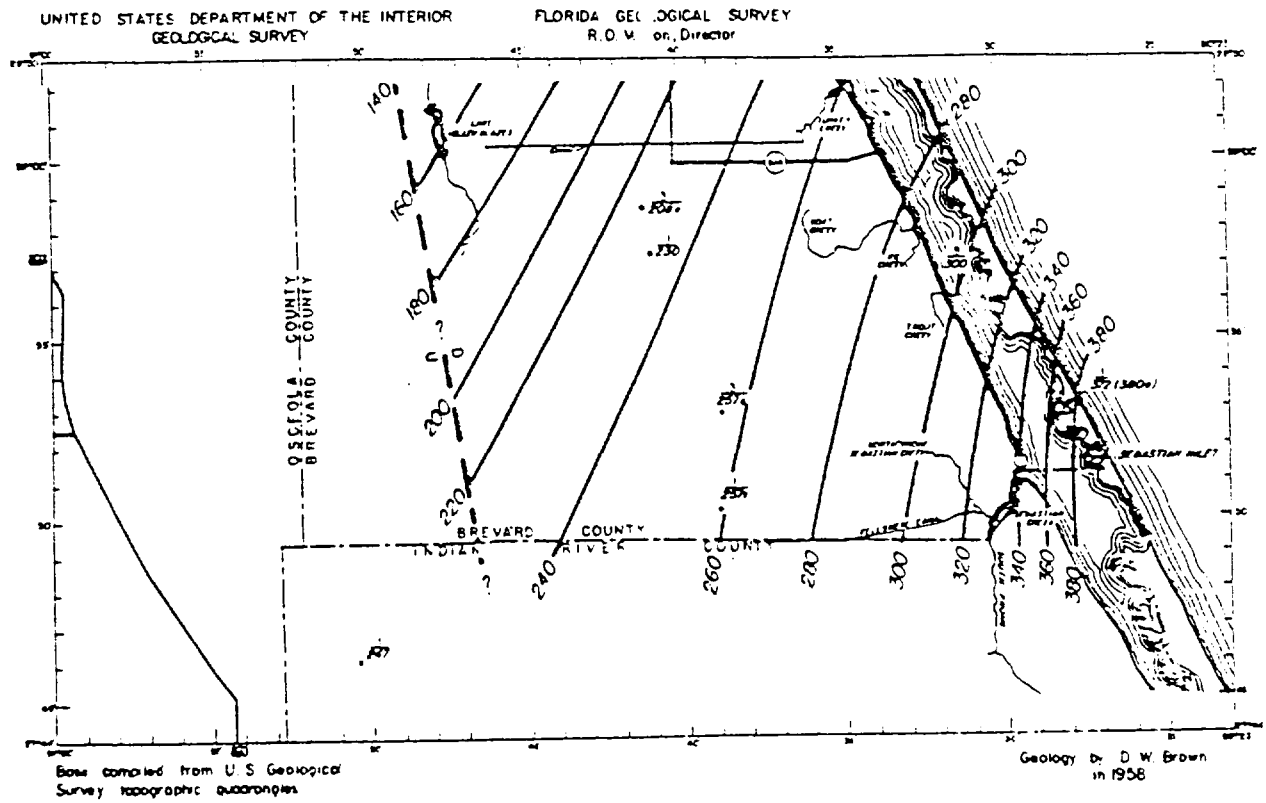


Figure 9. Brevard County showing contours on the surface of the limestone of Eocene Age.

surface of the zone of saturation in ordinary permeable soil or rock has been defined as the water table. The water table is not a plane surface but conforms generally to the configuration of the land surface. It contains small mounds or depressions that are due to local gain or loss of water. The water table does not remain stationary but fluctuates up and down in a manner similar to that of a water surface in a lake or reservoir.

The Pleistocene and Recent deposits are the principal deposits forming the nonartesian aquifer. There are some wells developed in the shell beds of the Hawthorn Formation. The Atlantic Coastal Ridge, which parallels the Indian River in Brevard County, forms the thickest part of the nonartesian aquifer. The nonartesian aquifer thins eastward and westward from the crest of the Atlantic Coastal Ridge. Sandy ridges that form a large part of the barrier islands are sources of nonartesian water for local residents and commercial establishments. In Brevard County the water table of the nonartesian aquifer ranges in depth from 0 to 22 feet below land surface but occurs generally at depths of less than 10 feet.

As a part of the investigation, 56 holes were augered and cased with 1¼-inch pipe and used as observation wells. The wells were located along east-west lines across the Atlantic Coastal Ridge and the lines were spaced from 6 to 12 miles apart (fig. 6). These wells were constructed to collect geologic information, to observe water-level fluctuations, and to procure water samples for chemical analysis.

SHAPE AND SLOPE OF THE WATER TABLE

The shape and slope of the water table is shown by means of water-table contours on a map of Brevard County (fig. 41). A water-table contour is a line along which all points on the water table have the same altitude. The water-table contours show the configuration of the water table in the same manner that topographic contours show the configuration of the land surface. Although the water table generally has less relief than the land surface, the configuration of the water table generally conforms to the shape of the land surface. Ground water moves downgradient at right angles to the water-table contours; thus, the contours indicate the general direction of ground-water movement, though not the rate. The rate is a function of the hydraulic gradient and the permeability of the sediments through which the water moves.

A ground-water divide is an imaginary line along each side of which the water table slopes downward and away from the line. The ground-water divide is analogous to the land divide between two drainage basins. The ground-water divide in Brevard County is shown in figure 41. This divide line generally follows the topographic high of the Atlantic Coastal Ridge.

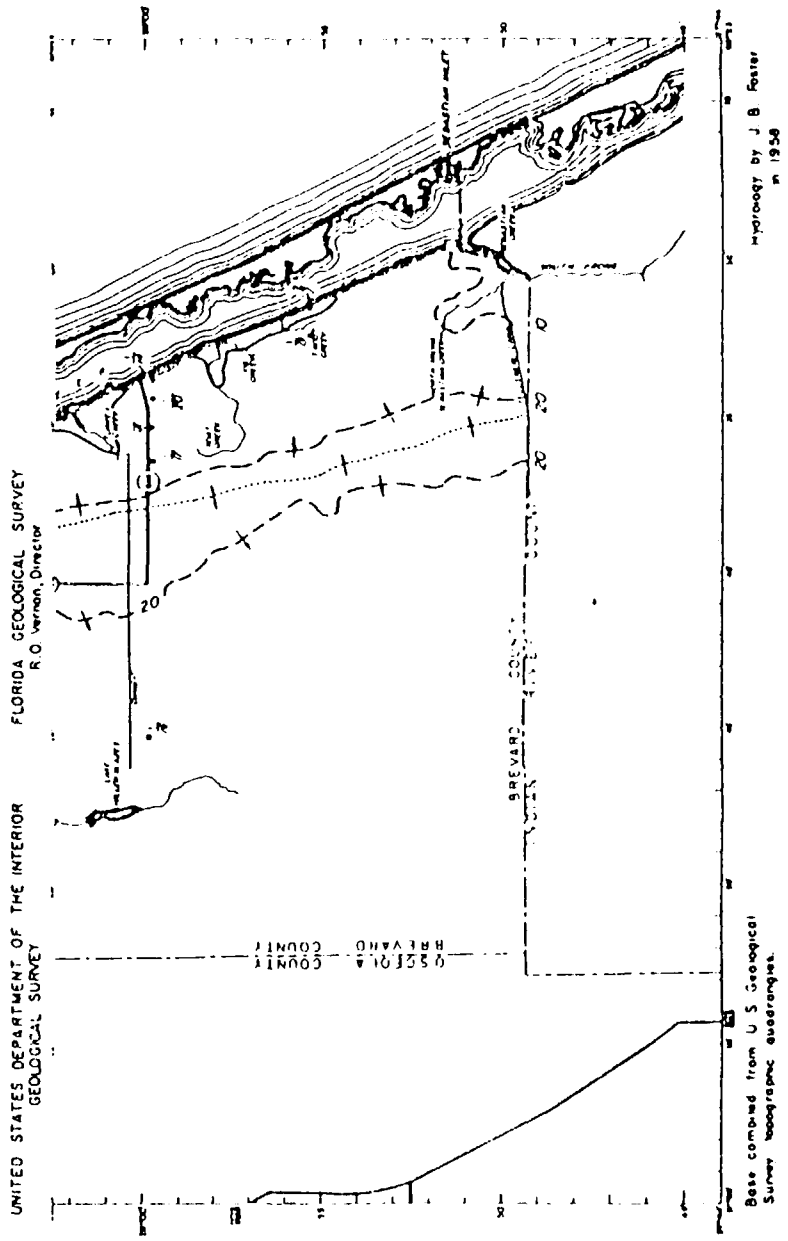
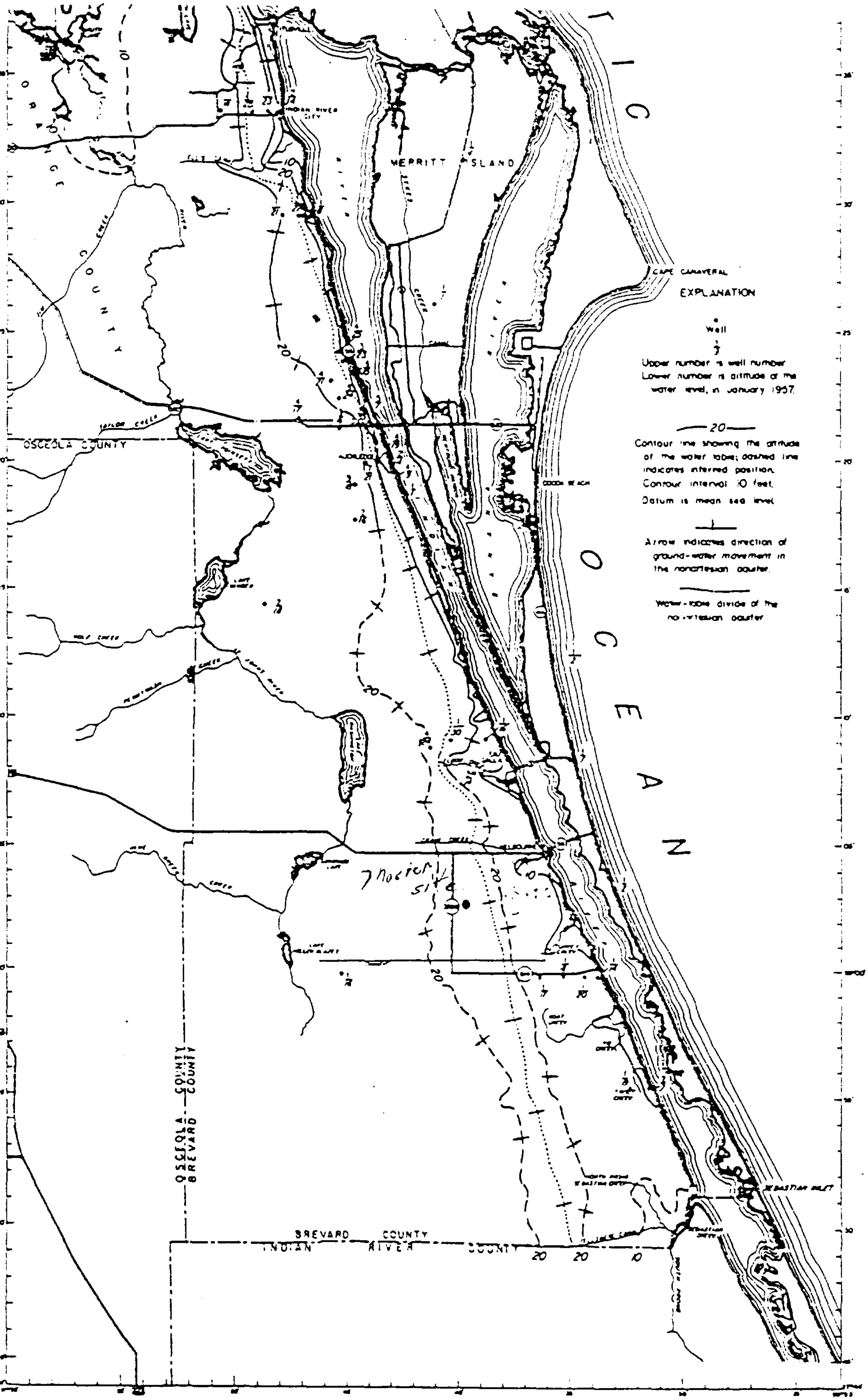


Figure 41. Brevard County showing water-table contours.



Base compiled from U. S. Geological Survey topographic quadrangles.

Hydrology by J. B. Foster in 1958

In some places where streams have cut across the Atlantic Coastal Ridge, the ground-water divide will follow around the drainage basin of the stream.

In Brevard County the ground water in the nonartesian aquifer generally moves eastward and westward, away from the divide. The gradient from the divide (center of Mims profile) eastward to the Indian River is about 20 feet to the mile (fig. 42). From the divide at Mims westward to the

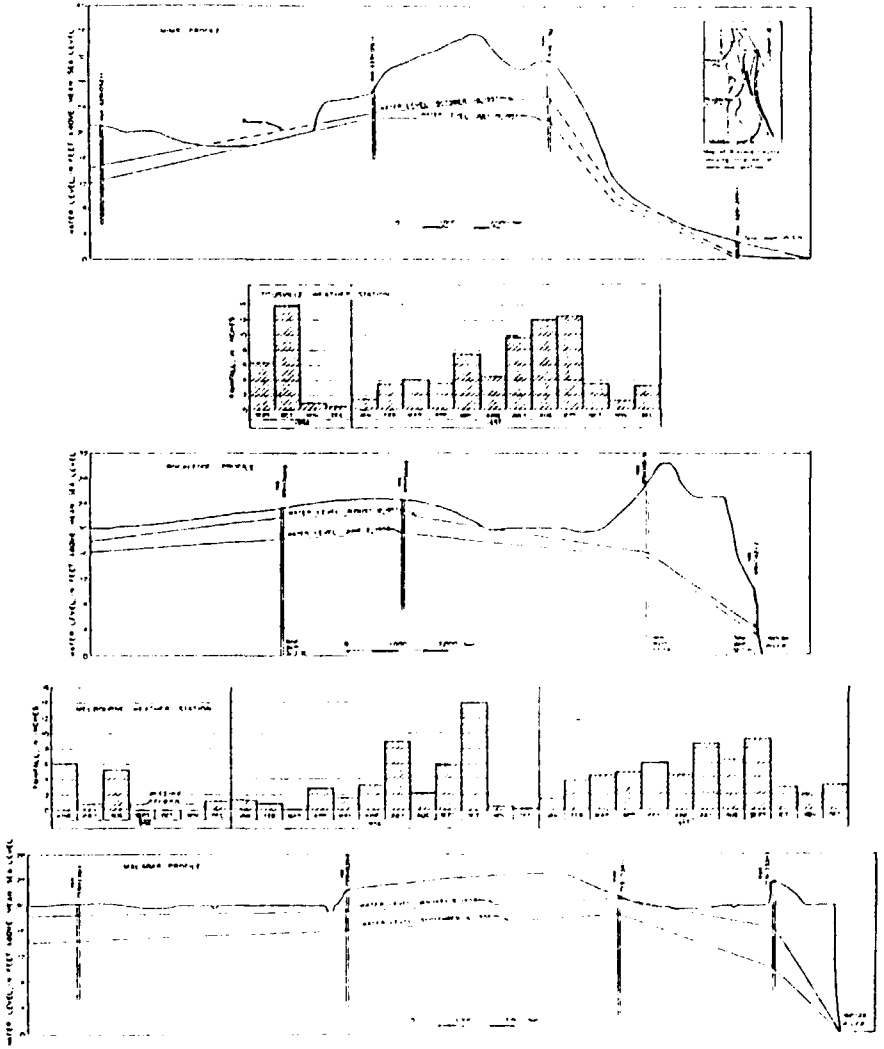


Figure 42. Water-table profiles across the Atlantic Coastal Ridge near Mims, Rockledge, and Malabar, Florida.

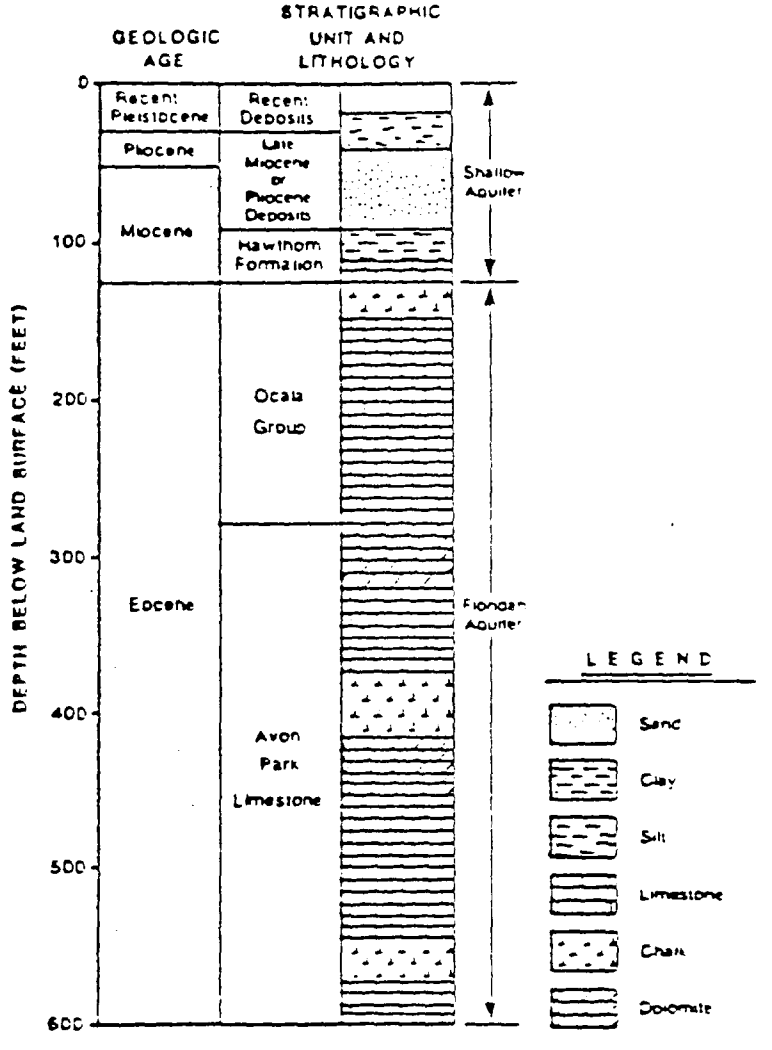
Drinking water Element
Palm Bay Comprehensive Plan 1988

G. GROUND WATER

1. Aquifers

Groundwater is all water beneath the surface of the land and occurs in zones termed aquifers.

In Palm Bay two aquifers comprise the groundwater: The shallow aquifer and the more deeply located Floridan Aquifer. The following graphic depicts the two aquifers and their characteristics.

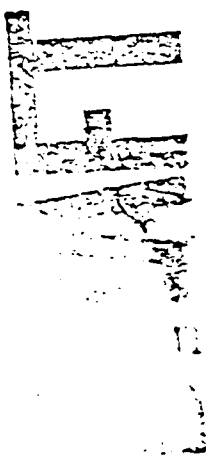


SOURCE: Port Malabar Water Supply Master Plan November 1986

The shallow aquifer is a layer of sandy soil, saturated with water and contiguous with surface water, streams, ponds and canals and extending beneath the land surface. The top of the shallow aquifer is the water table; the bottom is a limestone and clay strata known as the Hawthorne Formation which provides a barrier between the shallow and the Floridan Aquifer. Recharge to the shallow aquifer is provided by local rainwater which soaks into the ground and is stored in the sandy soils. Fluctuation in the water table occurs seasonally indicating changes in rainfall and the amount of water stored in the aquifer. The aquifer is very porous with transmissitivity estimates at 10,000-20,000 gpd/ft2. The shallow aquifer is the main source of water for the General Development Utility System and for homeowners using individual wells.

The Floridan Aquifer water is used for irrigation and stock watering by the agricultural sector in west Palm Bay and by the Harris Corporation for diluting chemical wastes and by the City for swimming pond water.

2. Quality



Water of the Floridan Aquifer, due to its high dissolved solids and chloride (salt) readings, is not considered suitable for human consumption (potable use) without treatment or dilution.

The shallow aquifer, however, does lend itself to potable uses. The amount of fresh water that the shallow aquifer is capable of producing to wells is a function of soils, vegetation, duration and intensity of rainfall, the slope of land surface and the permeability and thickness of the aquifer. The potentiometric surface[1] of the Floridan aquifer is above the water table. Thus, if the shallow aquifer is pumped at rates greater than the recharge rate, vertical upward leakage of the Floridan aquifer could occur with resulting reductions in the quality of the shallow aquifer's water. Other sources of saltwater and chlorides in the shallow aquifer are residuals from ocean deposits, irrigation build-ups and intrusions from canals and estuaries.

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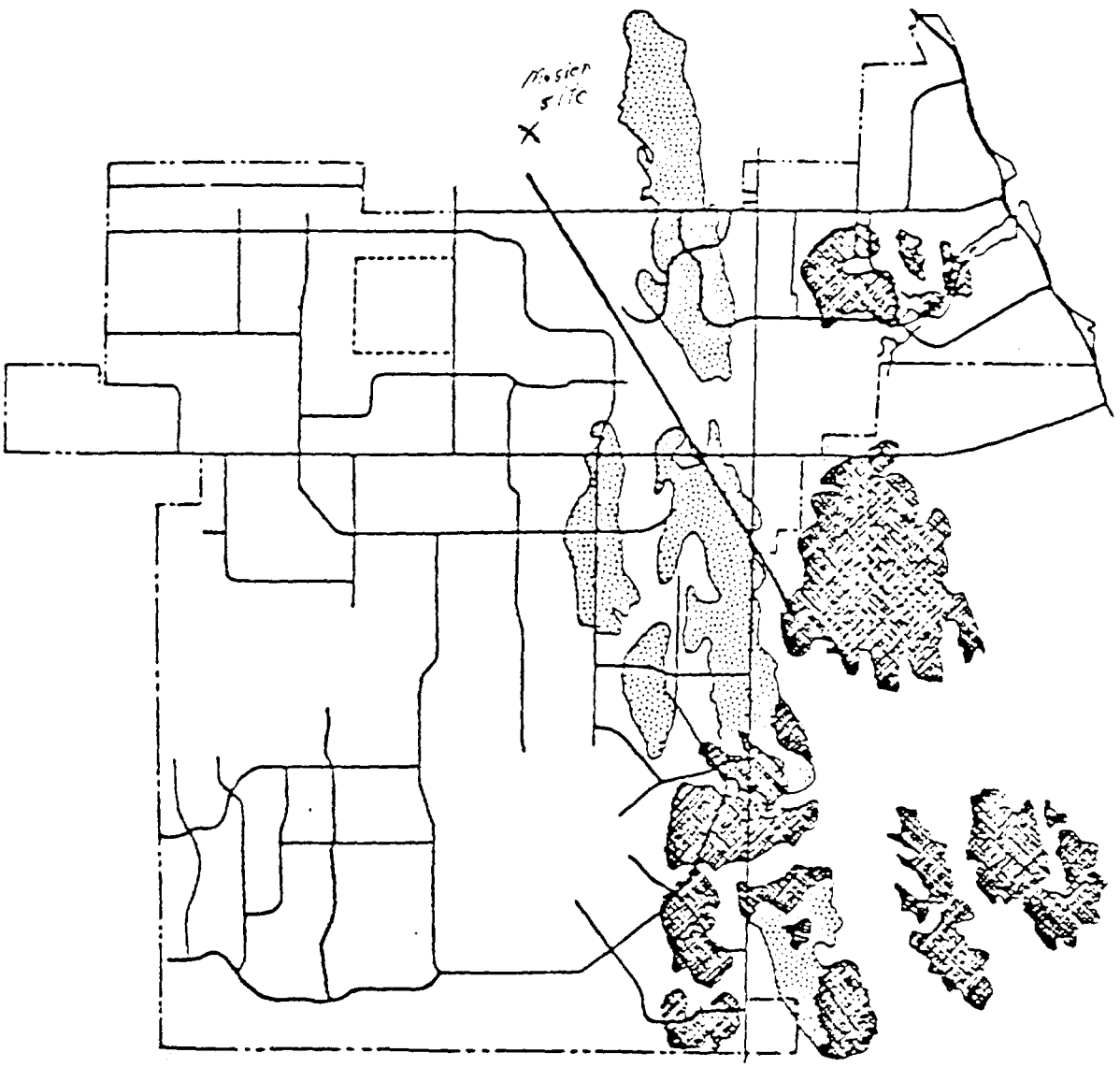
[1] Height to which water will rise in a cased well penetrating the aquifer.



PALM BAY, FLORIDA

POSSIBLE RECHARGE & POTENTIAL POTABLE WATER SUPPLY ZONES

COASTAL RIDGE RECHARGE AREAS (USGS, 1977)

POTENTIAL POTABLE WATER SUPPLY AREAS (FRAZEE, 1978)

SOURCE: CITY OF PALM BAY COMPREHENSIVE PLAN, 1981

0 1 mile

By Comparison to USGS Quad Map

Utilizing the estimate of 20 inches per year of recharge and the total City land area (excluding water area) of 36,731 acres provided in the Future Land Use Element, about 19.99 Bgy of rainfall is recharged to the shallow aquifer.

Formula: Yearly recharge (gal) = recharge (ft) x acres x gallons/acre foot

$$= \frac{20}{12} \text{ (ft)} \times 36{,}731 \times 325{,}850$$

$$\text{(Bgy)} = \frac{(1.67)(36{,}731)(325{,}850)}{1{,}000{,}000{,}000}$$

(Bgy Rounded) = 19.99

4. Use

Presently the City is served by two potable water systems:

The City of Palm Bay Distribution System which serves portions of the area east of I-95 using bulk water from the City of Melbourne's Lake Washington surface water service; and

The General Development Utilities (GDU) system which serves the remaining area of the City using the shallow aquifer as a water source. A recent study funded by the firm has recommended that it expand its shallow aquifer system while tapping the Floridan Aquifer for blending purposes and conduct additional analysis regarding a potential tie-in to the proposed South Brevard Water Authority System.

The City of Palm Bay, Water Master Plan, October, 1986 utilizes 75 gpd per person to project future water service demands for modeling purposes.

Since the City anticipates a population of 95,224 persons by the ten (10) year period ending in 1997, a total, including individual wells, potable water use of 7,141,800 gpd can be anticipated by 1997.

Non-potable agricultural/industrial and City recreation uses of the Floridan Aquifer are expected to continue.

[redacted]

EPA Notificat— Reference 3 —e

United States Environmental Protection Agency Washington DC 20460

DER

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

810609 MAY 15 1987

BAOM

FLS000001159

Person Required to Notify:
Enter the name and address of the person or organization required to notify.

Name: Samuel H. Halter, City Manager
Street: 900 E. Strawbridge Ave.
City: Melbourne State: FL Zip Code: 32901

Site Location:
Enter the common name (if known) and actual location of the site.

FLD980556484

Name of Site: See Attached McClenon Property
Street: Off Dairy Rd
City: Melbourne County: Brevard State: FL Zip Code: 32901

Person to Contact:
Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title): Kelly, Robert, Superintendent
Phone: (305) 727-2900

Dates of Waste Handling:
Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

Sites 1,2,(3) 1979 to ~~present~~ 1981
From (Year) To (Year)

Sites 4, 5, 6, 7, 8 1965 to 1979

Waste Type: Choose the option you prefer to complete

Option I: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item I—Description of Site.

General Type of Waste:
Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☐ Organics
2. ☐ Inorganics
3. ☐ Solvents
4. ☐ Pesticides
5. ☒ Heavy metals
6. ☐ Acids
7. ☐ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☐ Unknown
11. ☐ Other (Specify)

Source of Waste:
Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☐ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☐ Chemical, General
9. ☒ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary/Refuse
15. ☐ Photofinish
16. ☐ Lab/Hospital
17. ☐ Unknown
18. ☐ Other (Specify)

Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).

Specific Type of Waste:
EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

D007 Cr		
D008 Pb		

MAY 18 1987

BUREA

Reference #3

Form Approved

F. Waste Quantity:

Place an X in the appropriate boxes to indicate the facility types found at the site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

Facility Type

1. ☐ Piles
2. ☐ Land Treatment
3. ☐ Landfill
4. ☐ Tanks
5. ☐ Impoundment
6. ☐ Underground Injection
7. ☐ Drums, Above Ground
8. ☐ Drums, Below Ground
9. ☐ Other (Specify) Land spreading of sludge from POTW

Total Facility Waste Amount

cubic feet

gallons 38,000/day

Total Facility Area

square feet

acres ± 240

G Known, Suspected or Likely Releases to the Environment:

Place an X in the appropriate boxes to indicate any known, suspected, or likely releases of wastes to the environment. ☐ Known ☐ Suspected ☐ Likely ☒ No

Note: Items H and I are optional. Completing these items will assist EPA and State and local governments in locating and assess hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

H Sketch Map of Site Location: (Optional)

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.

SEE ATTACHED

I Description of Site: (Optional)

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

Sludge from two (2) POTW contains waste from electro-plating firms. Sites had the prior approval of Florida Department of Regulations

J Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the relationship to the site of the person

Name Samuel H. Halter, City Manager

CITY OF MELBOURNE

Street 900 E. Strawbridge Avenue

City Melbourne State FL Zip Code 32901

Signature [signature] Date [illegible]

- ■ Owner, Present
- ☐ Owner, Past
- ☐ Transporter
- ☐ Operator, Preser
- ☐ Operator, Past
- ☐ Other

ATTACHMENT

NOTIFICATION OF HARZARDOUS WASTE SITE

ITEM B:

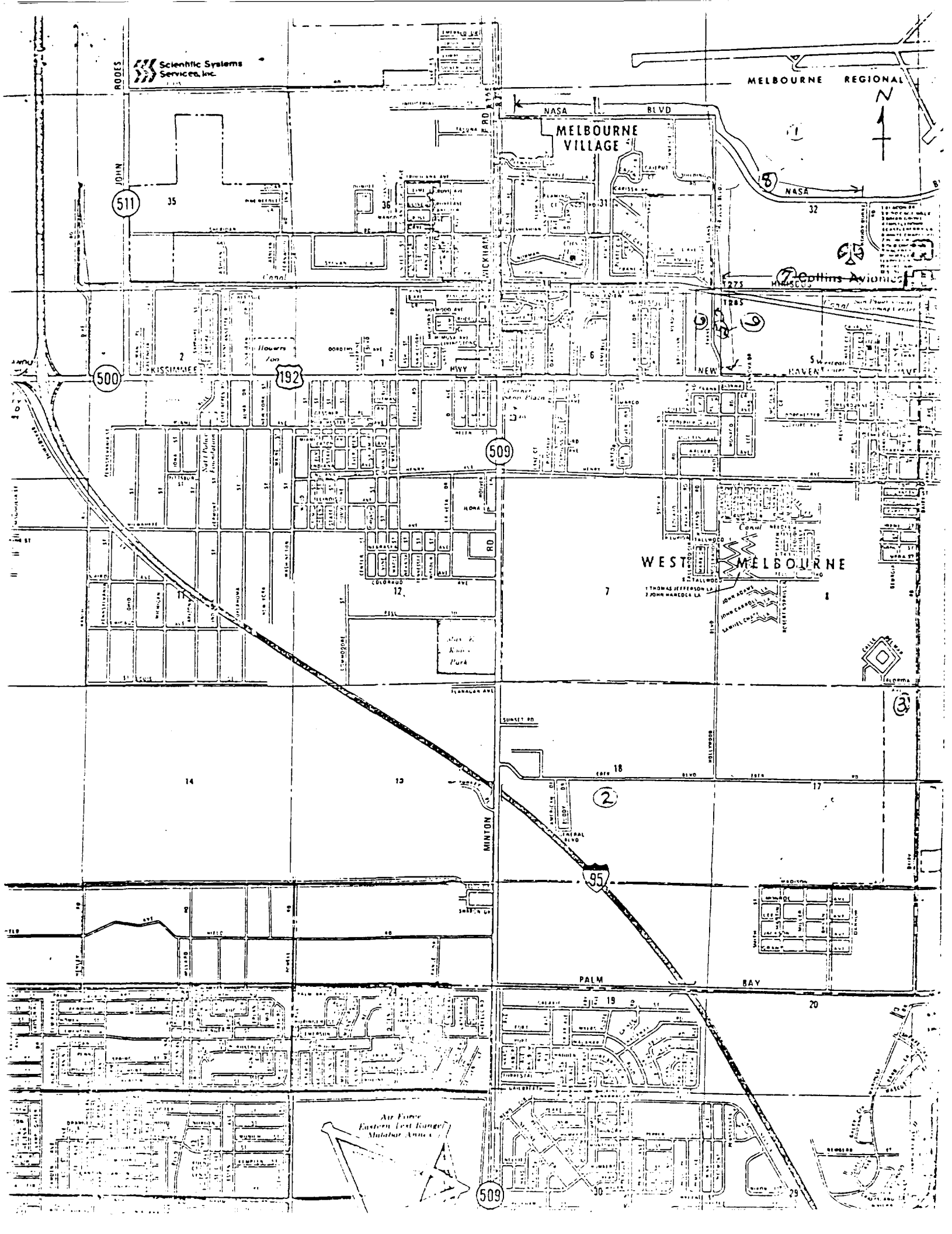
Present Sites: Spread 14 9-81

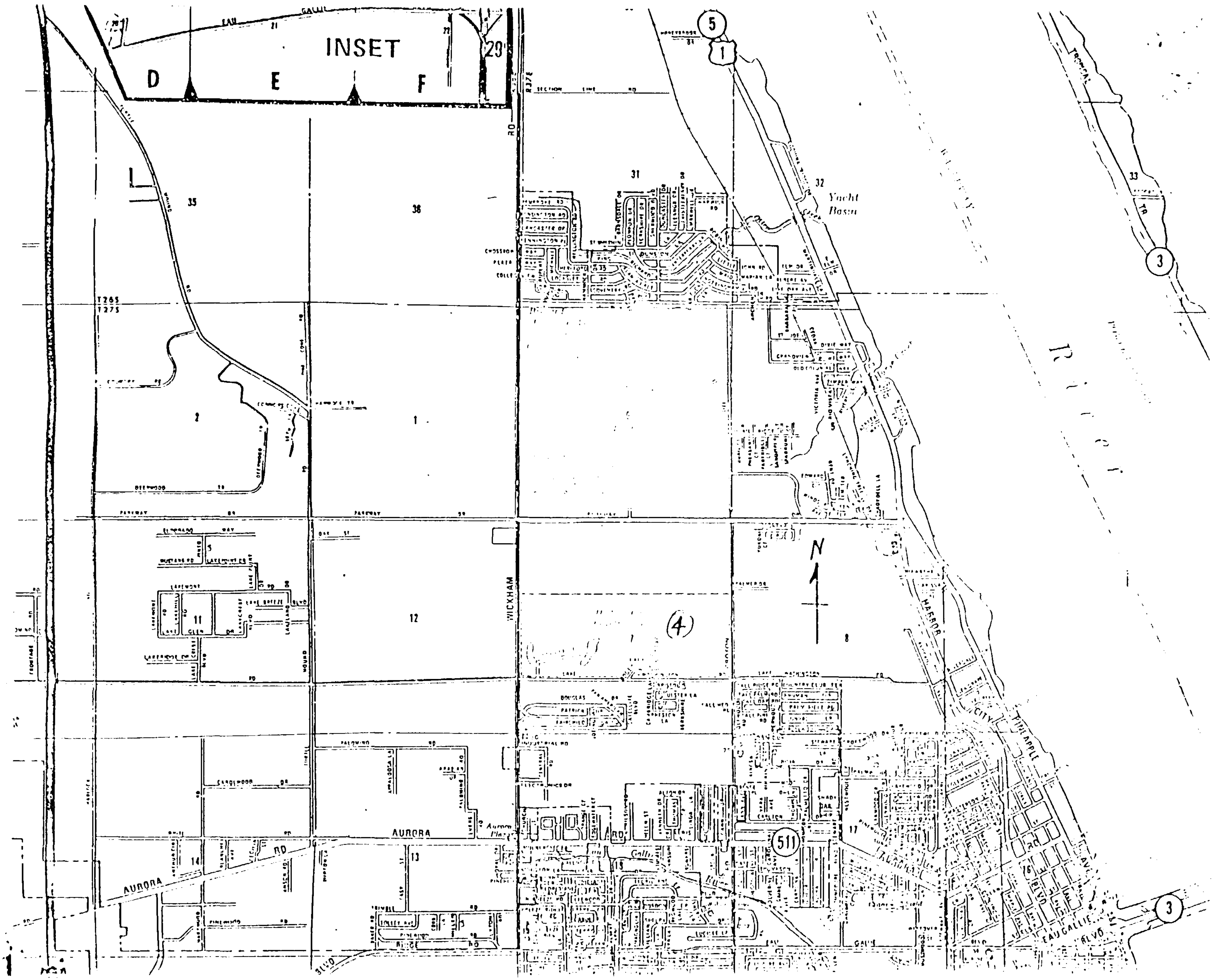
1. Approximately 120 acres of the southwest section of the Melbourne Regional Airport property, off of Nasa Blvd.
2. Approximately 40 acres of pasture land, i.e., Masier's property, located off of Eber Blvd., and east of Minton Road.
3. Approximately 40 acres of pasture land. i.e., Mr. McClenon's property, located off of Dairy Rd. and 1/4 mile west on Florida Ave.

All of the above areas are undeveloped and remote from public and no drainage from sites to public or private drinking water supplies.

Waste disposal began in 1965 and ended in 1979 at the subsequent sites:

4. Harbor City Golf Course, located west of Croton Road and north of Lake Washington Road.
5. Evans Road, east side , right-of-way. NASP Patuxent
6. John Evans property, 148 acres of pasture land. NWS Earle
7. Hibiscus Blvd., north side, right-of-way from Collins Avionics's west to Evans Road.
8. Nasa Blvd., north side right-of-way from Woody Burke Road to Wickham Road.


Scientific Systems Services, Inc.
MELBOURNE REGIONAL
NASA BLVD
MELBOURNE VILLAGE
NASA
Collins Avionics
JOHN RHODES BLVD
WICKHAM RD
NEW HAVEN AVE
KISSIMMEE HWY
Flowers Fan
Canal
WEST MELBOURNE
COLORADO AVE
HENDRIX RD
MINTON RD
SUNSET RD
PALM BAY
Air Force Eastern Test Range/ Patrick Air Force Base
511
500
192
509
95
1285
1275


INSET
D
E
F
WICKHAM
RD
AURORA
AURORA RD
PARKWAY
HARBOR
CITY
PINEAPPLE
EAU GALLIE BLVD
SECTION LINE RD
Yacht Basin
River
TROPICAL TR
N
(4)
5
1
3
511
T26S
T27S
R37E

LEVEL: REG 04
SELECTION: INTEGRATED
SEQUENCE: REGION, STATE, SITE NAME
EVENTS: SITE EVAL

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE
C E R C L I S V 1.2

L.8 - SITE/EVENT STATUS LISTING

REG	EPA ID NO.	SITE NAME / STREET / CITY / COUNTY NAME	STATE ZIP / COUNTY CODE	RESP. TERM.	PROG. CODE	EVENT TYPE	ACTUAL START DATE	ACTUAL COMPL. DATE	EVENT LEAD
04	FLD004126868	MEDALLION PAINT & COLOR 2810 N ROSEMARY AVE WEST PALM BEACH PALM BEACH	FL 33407 099		H01	DS1 PA1	09/16/85	02/01/85 09/16/85	EPA STATE
04	FLD032531154	MEDICAL SUPPLY CO 6687 NW 16 TERRACE FT LAUDERDALE BROWARD	FL 33309 011		H01	DS1		06/01/85	STATE
04	FLD980556468	MELBOURNE REGIONAL AIRPORT OFF NASA BLVD MELBOURNE # 1 BREVARD	FL 32901 009	N	H01	DS1 PA1		06/01/81 09/01/82	EPA
04	FLD981024490	MELWEB SIGNS, INC. 5514 NW 10TH TERRACE FT. LAUDERDALE BROWARD	FL 33309 011		H01	DS1		09/24/85	STATE
04	FLD981024755	METROPOLITAN PARK ADAMS ST. JACKSONVILLE DUVAL	FL 32202 031		H01	DS1 PA1	09/30/85	09/30/85 10/17/85	EPA EPA
04	FLD004119426	MIAMI BATTERY & ELECTRIC CO 11100 NW SOUTH RIVER DR MEDLEY DADE	FL 33178 025		H01	DS1		02/01/85	EPA
04	FLD080174162	MIAMI DADE WATER & SEWER AUTHORITY 3575 S LEJEUNE RD MIAMI DADE	FL 33134 025		H01	DS1		07/01/79	EPA
04	FLD076027820	MIAMI DRUM SERVICES 7049 NW 70TH ST MIAMI DADE	FL 33166 025		H01	DS1 PA1 ST1 HR1	11/01/84	11/01/79 09/01/82 11/01/84 12/01/82	EPA STATE

U.S. ENVIRONMENTAL PROTECTION AGENCY
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REG	EPA ID NO.	SITE NAME / STREET / CITY / COUNTY NAME	STATE ZIP / COUNTY CODE	RESP. TERM.	PROG. CODE	EVENT TYPE	ACTUAL START DATE	ACTUAL COMPL DATE	EVENT LEAD
04	FLD061906426	MARYLAND ASSEMBLIES INC PUCKETT RD PERRY TAYLOR	FL 32347 123		H01	DS1 PA1	10/01/84	10/01/84 10/01/84	EPA STATE
04	FLD980556476	MASIER'S PROPERTY #2 OFF EBER BLVD MELBOURNE BREVARD	FL 32901 009	N	H01	DS1 PA1		06/01/81 11/01/82	EPA
04	FLD981015597	MATHEWS BROTHERS DUMP NW 74TH ST & NW 81 AVE MIAMI DADE	FL 33166 025		H01	DS1 PA1	05/30/85	06/10/85 06/10/85	EPA EPA
04	FLD084131390	MCARTHUR DAIRY 308 NW 5TH ST OKEECHOBEE OKEECHOBEE	FL 33472 093	N	H01	DS1 SI1	11/01/79	07/01/79 12/01/79	EPA STATE
04	FLD980556484	MCCLENONS PROPERTY OFF DAIRY RD MELBOURNE #3 BREVARD	FL 32901 009	N	H01	DS1		06/01/81	EPA
04	FLD080170095	MCCUNE RADIO-AIRE 4465 N. POWERLINE ROAD FT LAUDERDALE BROWARD	FL 33309 011		H01	DS1 PA1	10/07/85	06/01/85 12/24/85	STATE STATE
04	FLD053501102	MCI CORP 6110 GUNN HWY TAMPA HILLSBOROUGH	FL 33624 057		H01	DS1 PA1 SI1	10/01/84 04/09/85	08/01/80 10/01/84 08/27/85	EPA STATE STATE
04	FLD980556369	MCKENZIE TANK LINES TRANSFER NORTH END NELSON ST JACKSONVILLE DUVAL	FL 32205 031	N	H01	DS1 PA1		06/01/81 06/01/82	EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE
C E R C L I S V 1.2

L.8 - SITE/EVENT STATUS LISTING

REG	EPA ID NO.	SITE NAME / STREET / CITY / COUNTY NAME	STATE / COUNTY	ZIP CODE	RESP. TERM.	PROG. CODE	EVENT TYPE	ACTUAL START DATE	ACTUAL COMPL DATE	EVENT LEAD
04	FLD981014301	H E W SITE 2250 NW 54TH STREET MIAMI DADE	FL 025	33142		H01	DS1 PA1	05/30/85	06/10/85 06/10/85	EPA EPA
04	FLD981029739	H K AUTO BODY 1101 NW 51 STREET FT LAUDERDALE BROWARD	FL 011	33309		H01	DS1 PA1	10/25/85	06/01/85 10/30/85	STATE STATE
04	FLD981029671	HALL FOUNTAIN, INC. 5500 NW 22 AVENUE FT LAUDERDALE BROWARD	FL 011	33309		H01	DS1		06/01/85	STATE
04	FLD980556534	HARBOR CITY GOLF COURSE #1 WEST OF CROTON RD MELBOURNE BREVARD	FL 009	32935	N	H01	DS1 PA1		06/01/81 08/01/82	EPA
04	FLD004145859	HARMSCO INC. 7169 49TH TERRACE NORTH WEST PALM BEACH PALM BEACH	FL 099	33407		H01	DS1 PA1 SI1	10/01/84 06/08/85	07/01/79 10/01/84 08/28/85	EPA STATE STATE
04	FLD981029622	HARRIS COMPUTER 1200 GATEWAY DR. POMPANO BEACH BROWARD	FL 011	33309		H01	DS1		06/01/85	STATE
04	FLD000602334	HARRIS CORP/GENERAL DEVELOPMENT UTILS OFF PALM BAY BLVD PALM BAY BREVARD	FL 009	32905		H01	DS1 PA1 SI1	02/01/85	09/01/80 11/01/82 02/01/85	EPA EPA
04	FLD000826842	HAYNESWORTH MINE/BREWSTER PLANT SR 37 BRADLEY POLK	FL 105	33835		H01	DS1 PA1	09/19/85	11/01/79 09/19/85	EPA STATE

L.8 - SITE/EVENT STATUS LISTING

REG	EPA ID NO.	SITE NAME / STREET / CITY / COUNTY NAME	STATE	ZIP CODE	RESP. TERM.	PROG. CODE	EVENT TYPE	ACTUAL START DATE	ACTUAL COMPL DATE	EVENT LEAD
04	FLD980556674	ESTECH GENERAL CHEMICALS CORP 2121 THIRD ST SW WINTERHAVEN POLK	FL 055	33880		H01	DS1 PA1		06/01/81 08/01/82	EPA
04	FLD004106829	ESTECH GENERAL CHEMS SILVER CITY MINE SR 555 BARTOW POLK	FL 105	33830	N	H01	DS1 PA1		10/01/79 03/01/80	EPA
04	FLD980845374	ETTLINGERS PIT 2805 KINGS AVE JACKSONVILLE DUVAL	FL 031	32207		H01	DS1 PA1		02/01/85 09/12/85	EPA EPA
04	FLD980556500	EVANS PROP OFF HIBISCUS BLVD MELBOURNE BREVARD	FL 009	32901	N	H01	DS1 PA1		06/01/81 08/01/82	EPA
04	FLD981024888	EVERGLADES LABOR CAMP 38277 SW 192ND AVE. FLORIDA CITY DADE	FL 017	33034		H01	DS1		12/31/84	STATE
04	FLD980846497	EVERGREEN DUMP 6281 WINONA DRIVE JACKSONVILLE DUVAL	FL 031	32206		H01	DS1 PA1	09/17/85	09/17/85 09/17/85	STATE EPA
04	FLD101949535	EXECUTIVE TERMINAL CORP 1575A W COMMERCIAL BLVD FT LAUDERDALE BROWARD	FL 011	33309		H01	DS1		06/01/85	STATE
04	FLD000827097	EXXON BULK PLANT NO.4556 917 N MAIN ST IMMOKALEE COLLIER	FL 021	33934		H01	DS1 PA1		06/01/81 01/01/83	EPA

L.8 - SITE/EVENT STATUS LISTING

REG	EPA ID NO.	SITE NAME STREET CITY COUNTY NAME	STATE COUNTY	ZIP CODE	RESP. TERM.	PROG. CODE	EVENT TYPE	ACTUAL START DATE	ACTUAL COMPL DATE	EVENT LEAD
04	FLD084717545	NEW WALES CHEMICAL INC SR 640 MULBERRY POLK	FL 105	33860		H01	DS1 PA1		11/01/79 03/01/80	EPA
04	FLD981004054	NEWBERRY LANDFILL COUNTY ROAD 337 NEWBERRY ALACHUA	FL 001	32669		H01	DS1 SI1		04/01/84 09/26/85	EPA EPA
04	FLD980845143	NEWPORT LANDFILL JCT WEST IDLEWOOD & KEY COURT PENSACOLA ESCAMBIA	FL 033	32505		H01	DS1 PA1		02/01/85 09/12/85	EPA STATE
04	FLD980556518	NO NAME #7 HIBISCUS BLVD MELBOURNE BREVARD	FL 009	32901	N	H01	DS1 PA1		06/01/81 09/01/82	EPA
04	FLD980556492	NO NAME #5 EVANS RD MELBOURNE BREVARD	FL 009	32901	N	H01	DS1 PA1		06/01/81 09/01/82	EPA
04	FLD980556526	NO NAME #6 NASA BLVD MELBOURNE BREVARD	FL 009	32901	N	H01	DS1 PA1		06/01/81 10/01/82	EPA
04	FLD980709398	NOCATEE HULL CREOSOTE HULL RD NOCATEE DE SOTO	FL 027	33864		H01	DS1 PA1 HR1	10/01/84	01/01/83 10/01/84 12/01/82	EPA STATE
04	FLD099615627	NORCROSS INDUSTRIES INC 5500 GEORGIA AVE WEST PALM BEACH PALM BEACH	FL 099	33405		H01	DS1		02/01/85	EPA

Reference 4

Dangerous Properties of Industrial Materials

Sixth Edition

N. IRVING SAX

Assisted by:

Benjamin Feiner/Joseph J. Fitzgerald/Thomas J. Haley/Elizabeth K. Weisburger

VNR VAN NOSTRAND REINHOLD COMPANY
New York

EPA

Development Document for Existing Source Pretreatment Standards for the Electroplating Point Source Category

Final

OVERSIZED

DOCUMENT

Reference 7

TOXIC METALS

Pollution Control and Worker Protection

Marshall Sittig

NOYES DATA CORPORATION
Park Ridge, New Jersey, U.S.A.
1976

Crane Creek

THE DISTRIBUTION OF SEVEN TRACE METALS IN THE CLAM, *Mercenaria mercenaria* FROM THREE EAST COAST FLORIDA LAGOONS

Conrad B. White
Marine Biologist
Environmental Engineering Department
Environmental Services Division

data from a survey for heavy metals in M. mercenaria from the Indian River during 1970 showed an increase in several metals, noteably Cr, Cu and Pb (Table 7;Florida HRS, data from survey performed in 1970); the data from the 1970 survey was suspect, however, as no information was available to describe the methods used for analysis.

Elevated Ag, Cu, Pb and Zn concentrations at station CC, which was located at the confluence of Crane Creek and the Indian River, were correlated with the combination of a large sewage treatment plant that discharges into the creek, a recreational boat marina at the mouth of the creek and stormwater runoff from the curb and gutter systems within the city of Melbourne. The station located at the confluence of Turkey Creek and the Indian River (I-10) had elevated Ag and Cu tissue levels which were attributed to the discharge from an electronic circuit board manufacturer that discharges wastewater into the upper regions of the creek, and a recreational boat marina near the mouth of the creek (Fig. 1).

A comparison between other stations with sewage treatment plants and stormwater discharges within short distances (I-4, I-7a, B6, 22a and S-1) indicated the discharges reflected the dominant contributors to that particular system in terms of trace metals. Those with industrial input, power and asphalt plants and/or extensive curb and gutter stormwater systems, showed slightly elevated levels of certain metals, namely Ag, Cr, Cu, and Pb, while those receiving input from predominantly residential areas showed overall lower metal levels. The

results for Cd were insufficient to allow correlation Crane Creek physical or biolgical factors.

DISCUSSION

In the present study, Mercenaria mercenaria was selected not only to determine accumulated trace metals and their possible effect on local human toxicity, but also to determine if M. mercenaria could serve as a substitute for Mytilus edulis in terms of the world-wide "Mussel Watch" sentinel program because the latter was not found within the immediate area. Like M. edulis, M. mercenaria partially feeds on organic fines (Meglitsch, 1972; Sparks, 1972; Purchon, 1977) which are documented as the principle site of trace metal adsorption (Windom et al., 1976). They have the same ability to uptake and concentate dissolved metals as did M. edulis (Latouche and Mix, 1982). M. mercenaria's role in recycling of sediment bound trace metals and metals associated with detrital material released from adjacent salt marshes, through the clam's deposition of feces and psuedofeces has not been quantified (Meglitsch, 1972; Banus et al. 1974; Purchon, 1977). There was some evidence that suggests that bivalve tissue levels do not necessarily mimic sediment metal loads. It was therefore suggested that any results from a sentinel program should be treated with caution if correlations with sediment metal loads are to be made (Huggett et al., 1975; Jenkins, 1981; Hungspreugs, 1984).

The association of detrital material and metal input has been established as being important because of the

Mammals found in Sloughs include the bobcat, the deer, the grey fox, the marsh rabbit, the opossum, the cotton rat, and the raccoon. Birds in the community include the bobwhite quail, cranes, egrets, herons, ibis, meadowlark, red-shouldered hawks, and snipe. Frogs and salamanders are examples of amphibians. Reptiles found in Sloughs are the cottonmouth moccasin, the eastern diamondback rattlesnake, the pigmy rattlesnake, the ringneck snake, and the yellow rat snake.

The last three communities accentuate the importance of Erna Nixon Park. The park is a positive force for the city and should continue to be protected. Development in the surrounding areas of the park has had an adverse affect on the natural habitat in the park. The area north of the park is zoned for industrial use in Brevard County, while the area to the east is zoned industrial in the City of Melbourne. Residential development in the Town of Melbourne Village and West Melbourne is located to the west and south of the park. The city should do everything in its power to protect and preserve the remaining habitats in the park area.

Brevard County is home to several endangered and threatened species. This fact combined with the types of ecological communities found in West Melbourne provide a method to determine species possibly existing in the city. The following species designated by federal and state agencies as endangered or threatened possibly exist in West Melbourne. Some of the birds are known to inhabit the Crane Creek area.

Reptiles

American Alligator,
Eastern Indigo Snake
Gopher Tortoise
Florida Pine Snake

Mammals

Bobcat
Florida Mouse

Plants

Pigmy-Pipes
Florida Beargrass

Birds

Kirtland's Warbler
Little Blue Heron
Louisiana (Tricolored) Heron
Florida Sandhill Crane
Bald Eagle
Migrant Loggerhead Shrike
Bachman's Sparrow
Southeastern Kestrel
Bachman's Warbler
Wood Stork
Osprey
Marsh Hawk
Reddish Egret
Snowy Egret
Tricolored Heron

Amphibians

Flatwoods Salamander

Plants

Celestial Lily
Golden Leather Fern
Rein Orchid
Catesby Lily
Snowy Orchid
Big Yellow Milkwort
Wild Coco
Fragant Ladies Tresses
Slender Ladies Tresses
Spring Ladies Tresses
Giant Wild Pine
Tampa Vervain
Simpson Zephyr Lily
Giant Leather Fern
Mosquito Fern
Bearded Grass Pink
Marsh Fern
Royal Fern
Downy Shield Fern
Netted Chain Fern
Rose Pogonia
Nodding Club Moss

It is known that an active bald eagle's nest exists just south of the West Melbourne corporate limits, near the cattle farm. The city should ensure any federal and state regulations which might affect land in West Melbourne associated with the eagle's habitat are strictly adhered to.

It is difficult for the city to monitor the movements of animal species that are endangered or threatened. Most of the species, both animal and plant, that possibly are in West Melbourne would be located in Erna Nixon Park or near the various waterbodies. The city should, where possible, join in studies to determine exactly which species are present and, if they are present, to set up programs for protection.

As stated earlier, there are very few areas left in the city that are in a natural state. It is difficult to control the clearing of land for development in an urban area. Erna Nixon Park will remain a natural state. The city should coordinate with developers to try and minimize the total clearing of land, especially in residential areas.

Reference 8

PUBLIC WATER SUPPLIES OF SELECTED MUNICIPALITIES IN FLORIDA, 1975

By Henry G. Healy

U.S. GEOLOGICAL SURVEY

WATER-RESOURCES INVESTIGATIONS 77-53

Prepared in cooperation with

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
ST JOHNS RIVER WATER MANAGEMENT DISTRICT
SUWANNEE RIVER WATER MANAGEMENT DISTRICT
NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
AND OTHER STATE, LOCAL, AND FEDERAL AGENCIES

July 1977

General Development Utilities, Inc.

PORT MALABAR, SEBASTIAN HIGHLANDS, JULINGTON CREEK
SILVER SPRINGS SHORES, DIVISIONS
5240 BABCOCK STREET, N.E., PALM BAY, FLORIDA 32905

(407) 723-2877

October 27, 1988

Reference 9

Brian Moore - Room 565B
Department Environmental Regulat.
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, FL 32399-2400

Dear Brian:

The attached General Development Utilities, Inc. (GDU) (Port Malabar Division) well information and well field map is submitted per your conversation with Tom O'Brien.

If you require additional information, please call me at (407) 724-2000, Ext. 408. Thank you.

Sincerely,

GENERAL DEVELOPMENT UTILITIES, INC.
Port Malabar, Sebastian Highlands,
Julington Creek, Silver Springs Shores

Jack Reece
Operations Manager

JR:pjl

Att.

pc: file

TABLE C
EXISTING GROUNDWATER SOURCES

WELL NO.	CASING DIA.-INCH INT/EXT	TOTAL DEPTH (FT)	CASING DEPTH (FT)	AVERAGE PUMPING (GPM)	FLOWING OR PUMPED	DESIGN PMP CAPACITY GPM/TDH	SOURCE AQUIFER	USE
2B*	8/16	100	70	15	PUMPED	100/115	SHALLOW	HOUSEHOLD
3*	8/16	100	70	43	PUMPED	150/116	SHALLOW	HOUSEHOLD
4*	8/16	85	52	105	PUMPED	150/112	SHALLOW	HOUSEHOLD
5*	8/16	85	52	65	PUMPED	175/115	SHALLOW	HOUSEHOLD
6*	8/16	80	50	80	PUMPED	150/120	SHALLOW	HOUSEHOLD
7*	8/16	95	55	120	PUMPED	250/135	SHALLOW	HOUSEHOLD
8*	8/16	90	50	100	PUMPED	150/120	SHALLOW	HOUSEHOLD
9	8/16	100	70	145	PUMPED	160/140	SHALLOW	HOUSEHOLD
10	8/16	100	70	220	PUMPED	255/155	SHALLOW	HOUSEHOLD
11	8/16	106	74	100	PUMPED	275/187	SHALLOW	HOUSEHOLD
12	8/16	104	74	180	PUMPED	255/186	SHALLOW	HOUSEHOLD
13	8/16	100	70	220	PUMPED	250/187	SHALLOW	HOUSEHOLD
14	8/16	115	80	70	PUMPED	150/187	SHALLOW	HOUSEHOLD
15	8/16	97	62	190	PUMPED	250/187	SHALLOW	HOUSEHOLD
16	8/16	105	90	170	PUMPED	250/135	SHALLOW	HOUSEHOLD
17	8/16	103	73	310	PUMPED	400/125	SHALLOW	HOUSEHOLD
18	8/16	101	71	90	PUMPED	250/162	SHALLOW	HOUSEHOLD
19**	8/16	100	70	-	--	---	--	--
20	10	89	70	250	PUMPED	275/150	SHALLOW	HOUSEHOLD
21	10	87	65	120	PUMPED	160/150	SHALLOW	HOUSEHOLD
22	10	101	77	150	PUMPED	185/150	SHALLOW	HOUSEHOLD
23	10/16	104	60	220	PUMPED	260/150	SHALLOW	HOUSEHOLD
24	10/16	93	60	150	PUMPED	210/150	SHALLOW	HOUSEHOLD
28	10/16	105	60	220	PUMPED	200/150	SHALLOW	HOUSEHOLD
49	10/16	98	60	198	PUMPED	250/150	SHALLOW	HOUSEHOLD
F-1	12	360	300	500	FLOWING	700/100	DEEP FLA. AQUIFER	

* WELL PUMPED TO A VOLATILE ORGANIC COMPOUND PRETREATMENT UNIT
** INACTIVE

# of connections 9/88 = 11,808

Reference 10

Hibiscus

For Routing To Other Than The Addressee

To _____ Location _____

To _____ Location _____

To _____ Location _____

From _____ Date _____

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

Interoffice Memorandum

12/21/88

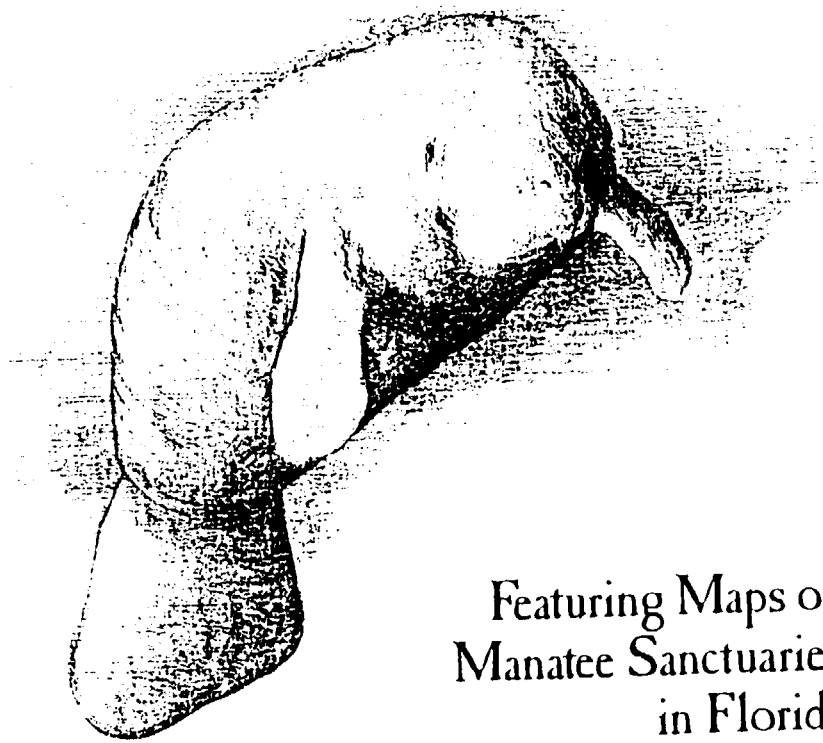
From: Mary Lubinski

To: Brian Moore

Subject: Endangered Species of Brevard County

Enclosed is information regarding endangered and threatened species Which are found in Brevard County.

Boaters' Guide to MANATEES: The Gentle Giants



Featuring Maps of Manatee Sanctuaries in Florida

Florida Power & Light Company

Seeking Warm Water Refuge

Manatees are not territorial and asssociations with other manatees are usually brief, lasting for several hours or days. Groups often form when they seek the same warm-water areas.

Current evidence and observations of manatees seem to indicate that these warm-water areas are needed for the manatee's survival, as the minimum water temperature they are able to tolerate for long periods of time is approximately 66F (19C).

Power Plant Outfalls

Historically, manatees have used springs and spring-fed rivers for refuge, but many of these areas increasingly are being used for recreational purposes. As an alternative, manatees are using power plants and other industrial outfalls for refuge. Ironically, while the increasing human population pushes manatees away from some areas, the power plants that provide electricity to this growing populace serve as a refuge for the peaceful mammal.

The survival of the manatee is still in doubt, but government, industry and conservationists – with the help of the concerned boating public – are working together to ensure that Florida

Sanctuaries Established

The greatest single cause of manatee death is collision with boats. Nearly all Florida's manatees bear boat injuries and propeller scars.

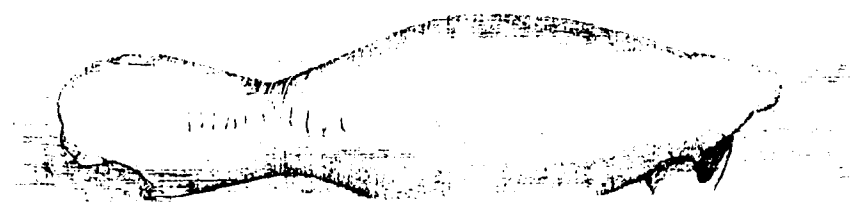
As a result of legislative action in 1978, 13 winter manatee sanctuaries were established and speed zone signs posted. Other sanctuaries have been created since then bringing the total to nearly 20 manatee sanctuaries in Florida.

Some sanctuary speed zones are in effect year-round including Turkey Creek in Brevard County and Black Creek in Dade County. A similar year-round sanctuary has been proposed for the Big Bend area of Tampa Bay and is expected to be posted in 1986. Other sanctuaries have seasonal speed zones. For example, speed zones on the Withlacoochee River are in effect during the summer season from March 1 through September 30 each year, while speed zones on the nearby Homosassa River are in effect during the winter season from October 1 through March 31 each year. Most of Florida's manatee sanctuary speed zones are in effect during the winter months when the mammals seek warmer waters, generally from November 15 through March 31.

Reporting Accidents

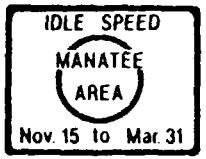
Boaters reporting animals injured by accidental boat hits are a crucial factor in saving the West Indian manatee. Outside posted zones, accidental hits carry no penalties, and the time saved in getting help for the animal is critical. If you hit a manatee, or come upon a seriously injured manatee, the following steps should be taken:

- note the location
- if possible get another boat to stay with the animal
- notify either the toll-free Resource Alert number 1-800-342-1821; the nearest Florida Marine Patrol office or the nearest local law enforcement agency.

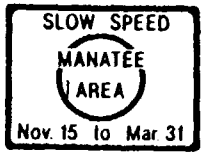


Boating Speed Zones

To alert the boater and protect the manatee in its sanctuaries, the law provides a number of cautionary and regulatory speed zones. Following are some illustrations and a brief explanation of the various signs:



Idle Speed Zone - a zone in which boats are not permitted to go any faster than necessary to be steered; generally these signs appear near the center of a protected manatee sanctuary.



Slow Speed Zone - a no-wake or minimum-wake zone where boats must not be on a plane and must be level in the water; generally these signs are posted on the fringe of protected areas to warn you that you are approaching an area frequented by manatees; in some areas the channel is exempt.

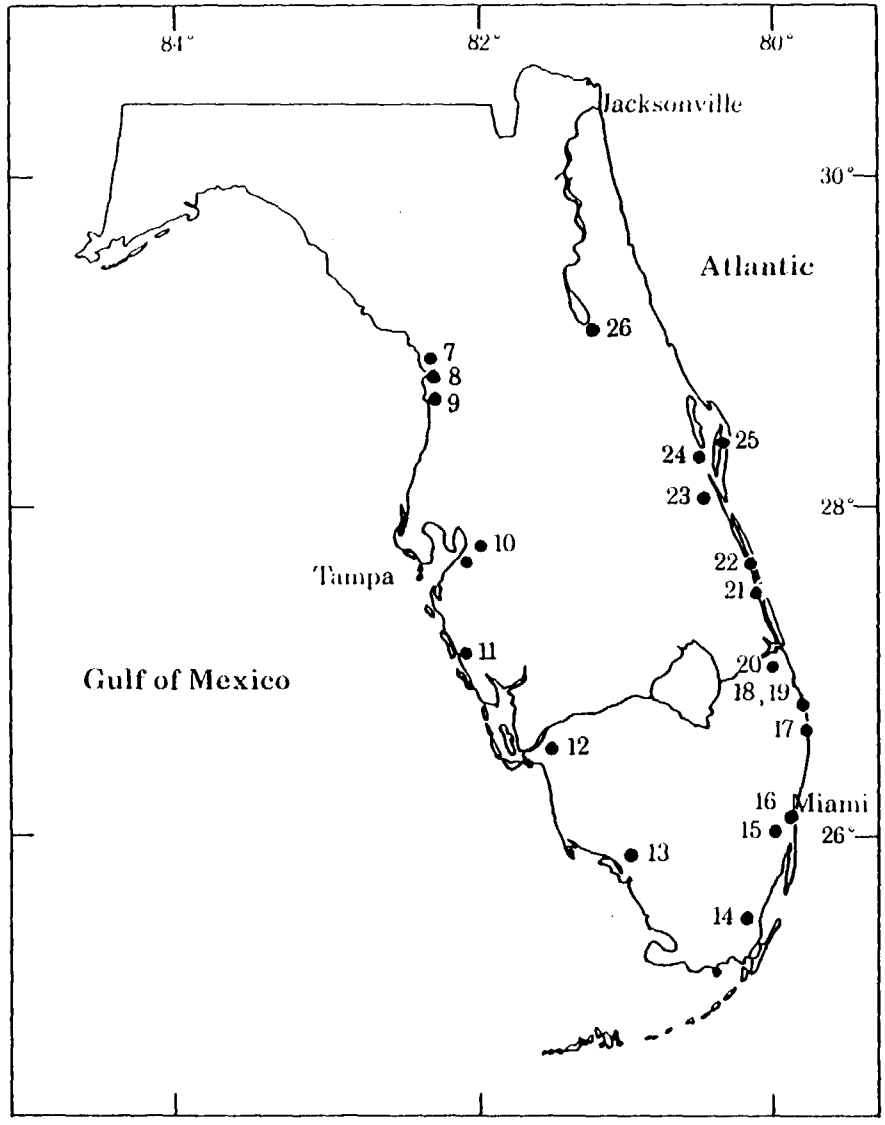
Caution Zone - a zone frequently inhabited by manatees, requiring caution on the part of boaters to avoid disturbing or injuring the animals.

No Entry Zone - a protected zone that prohibits boating, swimming and diving for the protection of manatees.

Safe Operation Zone - a sign indicating that you may resume safe boating speed; visible as you leave a protected area.

Anyone convicted of violating the law faces the possibility of a maximum fine of $500 and/or imprisonment of up to 60 days. Conviction on a federal level entails greater fines and/or imprisonment.

Manatee Sanctuaries in Florida



The blue shaded area indicates the distribution of the West Indian manatee in Florida. Dots indicate protected areas. Numbers refer to the page where a detailed map can be found.

Effective dates of speed zones, as noted on these maps, vary with geographic location. Caution should be exercised year-round in these areas since many manatees remain beyond the posted dates.

Official Lists of

Endangered and Potentially

Endangered Fauna and Flora in Florida

1 July 1988

FLORIDA GAME AND FRESH WATER FISH COMMISSION

Compiled by Don A. Wood, Endangered Species Coordinator

Florida Game and Fresh Water Fish Commission

Scientific Name(s)	Common Name	Designated status[1] FGFWFC[2]	FDA[3]	USFWS[4]	CITES[5]
Aquila chrysaetos	Golden eagle				II
Athene cunicularia	Burrowing owl	SSC			
Buteo swainsoni	Swainson's hawk			UR2	
Campephilus principalis	Ivory-billed woodpecker	E		E	
Charadrius alexandrinus tenuirostris	Southeastern snowy plover	T		UR2	
Charadrius melodus	Piping plover	T		T	
Circus cyaneus	Marsh hawk; northern harrier				II
Cistothorus palustris griseus	Worthington's marsh wren	SSC			
Cistothorus palustris marianae	Marian's marsh wren	SSC			
Columba leucocephala	White-crowned pigeon	T		UR2	
Dendroica dominica stoddardi	Stoddard's yellow-throated warbler			UR2	
Dendroica kirtlandii	Kirtland's warbler	E		E	
Egretta caerulea	Little blue heron	SSC			
Egretta rufescens	Reddish egret	SSC		UR2	
Egretta thula	Snowy egret	SSC			
Egretta tricolor	Tricolored heron; Louisiana heron	SSC			
Elanoides forficatus	Swallow-tailed kite			UR2	
Falco columbarius	Pigeon hawk; merlin				II
Falco peregrinus tundrius	Arctic peregrine falcon	E		T	I
Falco sparverius paulus	Southeastern American kestrel	T		UR2	II
Falco sparverius sparverius	Eastern American kestrel				II
Grus canadensis pratensis	Florida sandhill crane	T			II
Haematopus palliatus	American oystercatcher	SSC			
Haliaeetus leucocephalus	Bald eagle	T		E	I
Lanius ludovicianus migrans	Migrant loggerhead shrike			UR2	
Mycteria americana	Wood stork	E		E	
Pandion haliaetus	Osprey	SSC*			II
Pelecanus occidentalis	Brown pelican	SSC			
Picoides borealis	Red-cockaded woodpecker	T		E	
Polyborus plancus auduboni	Audubon's crested caracara	T		T	
Rallus longirostris insularum	Mangrove clapper rail			UR2	
Rostrhamus sociabilis	Snail kite	E		E	
Sterna antillarum	Least tern	T			
Sterna dougallii	Roseate tern	T		T	
Vermivora bachmanii	Bachman's warbler	E		E	

*Applicable in Monroe County only

Mammals

Balaena glacialis	Right whale	E		E	I
Balaenoptera borealis	Sei whale	E		E	II
Balaenoptera physalus	Finback whale	E		E	II
Blarina carolinensis (=brevicauda) shermani	Sherman's short-tailed shrew	SSC		UR2	
Eumops glaucinus floridanus	Florida mastiff bat			UR2	
Felis concolor coryi	Florida panther	E		E	I
Geomys pinetis goffi	Goff's pocket gopher	E		UR3	
Lutra canadensis	River otter				II
Lynx rufus	Bobcat				II
Megaptera novaeangliae	Humpback whale	E		E	I
Microtus pennsylvanicus dukecampbelli	Duke's saltmarsh vole	SSC		UR2	
Mustela frenata peninsulae	Florida long-tailed weasel			UR2	
Mustela vison evergladensis	Everglades mink	T		UR2	
Mustela vison lutensis	Florida mink			UR2	
Myotis austroriparius	Southeastern bat			UR2	
Myotis grisescens	Gray bat	E		E	
Myotis sodalis	Indiana bat	E		E	
Neofiber alleni	Round-tailed muskrat			UR2	
Neotoma floridana smalli	Key Largo woodrat	E		E	
Odocoileus virginianus clavium	Key deer	E		E	
Oryzomys argentatus	Silver rice rat	E		UR1	
Oryzomys palustris planirostris	Pine Island rice rat			UR2	
Oryzomys palustris sanibeli	Sanibel Island rice rat	SSC		UR2	
Peromyscus floridanus	Florida mouse	SSC		UR2	
Peromyscus gossypinus allapaticola	Key Largo cotton mouse	E		E	

Scientific Name(s)	Common Name	Designated status[1] FGFWFC[2]	FDA[3]	USFWS[4]	CITES[5]
Peromyscus gossypinus anastasae	Anastasia Island cotton mouse			UR2	
Peromyscus gossypinus restrictus	Chadwick Beach cotton mouse	E		UR2	
Peromyscus polionotus allophrys	Choctawhatchee beach mouse	E		E	
Peromyscus polionotus decoloratus	Pallid beach mouse	E		UR3	
Peromyscus polionotus leucocephalus	Santa Rosa beach mouse			UR2	
Peromyscus polionotus niveiventris	Southeast beach mouse			UR2	
Peromyscus polionotus peninsularis	St. Andrews beach mouse			UR2	
Peromyscus polionotus phasma	Anastasia beach mouse			UR2	
Peromyscus polionotus trissyllepsis	Perdido Key beach mouse	E		E	
Physter catodon	Sperm whale	E		E	
Plecotus rafinesquii	Southeastern big-eared bat			UR2	
Procyon lotor auspicatus	Key Vaca raccoon			UR2	
Procyon lotor incautus	Key West raccoon			UR2	
Scalopus aquaticus anastasae	Anastasia Island mole			UR2	
Scalopus aquaticus bassi	Englewood mole			UR2	
Sciurus niger avicennia	Big cypress fox squirrel	T		UR2	
Sciurus niger shermani	Sherman's fox squirrel	SSC		UR2	
Sigmodon hispidus exsputus	Lower Keys cotton rat			UR5	
Sigmodon hispidus insulicola	Insular cotton rat			UR2	
Sigmodon hispidus littoralis	Micco cotton rat			UR2	
Sorex longirostris eionis	Homosassa shrew	SSC		UR2	
Sylvilagus floridanus ammophilus	Micco cottontail rabbit			UR2	
Sylvilagus palustris hefneri	Lower Keys rabbit			UR2	
Tamias striatus	Eastern chipmunk	SSC			
Trichechus manatus latirostris	West Indian manatee	E		E	1
Ursus americanus floridanus	Florida black bear	T*		UR2	

*Not applicable in Baker and Columbia counties and Apalachicola National Forest

COMPREHENSIVE PLAN

CITY OF WEST MELBOURNE

HOUSING, RECREATION AND OPEN SPACE,
CONSERVATION, PUBLIC FACILITIES,
INTERGOVERNMENTAL COORDINATION,
FUTURE LAND USE, AND
CAPITAL IMPROVEMENTS

APRIL 1, 1988

PREPARED BY
WEST MELBOURNE DEPARTMENT OF COMMUNITY DEVELOPMENT
WEST MELBOURNE DEPARTMENT OF ENGINEERING
EAST CENTRAL FLORIDA REGIONAL PLANNING COUNCIL

Preparation of this document was aided through financial assistance received from the State of Florida under the Local Government Comprehensive Planning Assistance Program authorized by Chapter 86-167, Laws of Florida, and administered by the Florida Department of Community Affairs.

CONVERSATION RECORD

Date: 12/28/88

Time: 3pm

File Name: Brevard Sludge Spreading Sites.

Contact Person: Conrad White - Brevard Cty. Nat. Resources

Phone No.: (407) 632-6010

Subject: Heavy metals at the mouth of Crane Creek.

Conrad White stated that elevated silver, copper, lead and zinc were found in sediment samples taken at the confluence of Crane Creek and the Indian River. These metals were presumed to be from the effluent from the Grant St. waste water treatment plant and also from storm water runoff.

According to County Biologist Bob Day who is a co-worker of Conrad PCBs were found in the sediments when Crane Creek was dredged. The spoil was sent to Alabama for disposal. Origin of PCBs was unknown.

Brian M. Moore

Appendix

Unlisted (Characteristic) Hazardous Wastes

(40 CFR Part 261, Subpart C)

and

Lists of Hazardous Wastes

(40 CFR Part 261, Subpart D)

HANDBOOK OF TOXIC AND HAZARDOUS CHEMICALS AND CARCINOGENS

Second Edition

by

Marshall Sittig

Princeton University

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ring, Ethyl Corpo-
and Princeton Uni-
ns.

np NOYES PUBLICATIONS
Park Ridge, New Jersey, U.S.A.

Criteria for Water) was published. On November 28, 1980 (45 F 79318), and February 15, 1984 (49 FR 5831), EPA announced throug Federal Register notices, the publication of 65 individua ambient water quality criteria documents for pollutants listed a toxic under section 307(a)(1) of the Clean Water Act. On Jul 29, 1985 (50 FR 30784), EPA published additional water qualit criteria documents.

The development and publication of ambient water qualit criteria has been pursued over the past 10 years and is a ongoing process. EPA expects to publish about 10 final criter documents each year. Some of these will update and revi existing criteria recommendations and others will be issued f the first time.

In a continuing effort to provide those who use EPA's wat quality and human health criteria with up-to-date criteria valu and associated information, this document Quality Criteria f Water 1986 was assembled. This document includes summaries all the contaminants for which EPA has developed criteria rec mendations (Appendix A-C). The appropriate appendix identified at the end of each summary. A more detail description of these procedures can be found in the appropri Appendix. Copies of this document can be obtained by contact the U.S. Government Printing Office at:

U.S. Government Printing Office
Superintendent of Documents
N. Capitol and H Street N.W.
Washington, D.C. 20401

A fee is charged for this document.

Copies of the complete background ambient water qual

WINDSHIELD SURVEY FORM

Date: 9/22/88
Surveyed by: Brian Moore

1. Site Name Hibbins Rd site #7

   Correct Address The Oaks Shopping Center frontage & other businesses

   Phone # _____

   EPA ID # FLD _____

   Type of business/industry Retail Dist. of Gas

2. Directions to the Site _____

3. Check if present on site and use the space provided to describe:

   a. storage tanks (above/below ground; how many; condition) _____

   b. berms (material/condition) _____

   c. drums (covered/uncovered; on/off the ground; condition; number; labels) _____

   d. other storage containers _____

   e. impoundments/pits/ponds _____

   f. piles on ground (material; covered/uncovered) _____

   g. dumpster/bulk waste container _____

   h. air stacks _____

   i. air emissions/odor (wind direction) _____

   j. posted signs (which ones; location) _____

   k. sprayfield/ drainfield _____

   l. pesticide storage _____

   m. evidence of past fire/fire protection equipment _____

   n. soil discoloration _____

...ield Survey Form (Continued)

9. Comments: _____

_____

_____

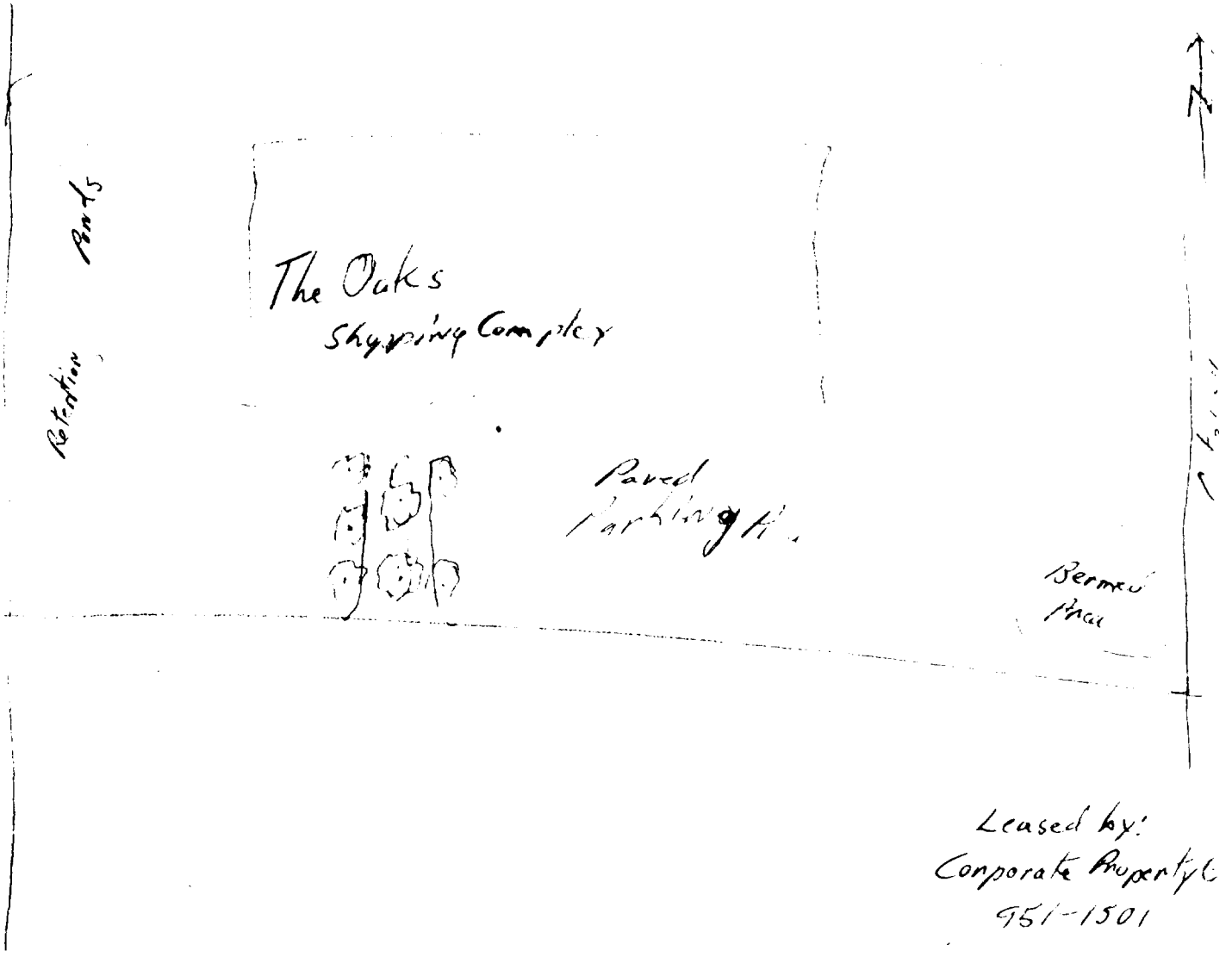
_____

_____

10. Recommendations: _____

_____

_____



Chemical Criteria in mg/kg dry weight

Parameter	Grade I	II	III
Cadmium	<=30	30--100	>100
Copper	<=900	900--3000	>3000
Lead	<=1000	1000--1500	>1500
Nickel	<=100	100--500	>500
Zinc	<=1800	1800--10000	>10,000

SLUDGE QUALITY D.R.LEE WWTP

DATE	Cd mg/kg	Cu mg/kg	Pb mg/kg	Ni mg/kg	Zn mg/kg	Tot.N %	Tot.P %	Tot.K %	Ph	Solids %
8/23/84	4.68	4799.00	598.00	548.00	1216.00	1.42	2.89	0.84	6.80	0.75
10/18/84	10.00	3802.00	350.00	317.00	475.00	0.09	2.53	0.07	6.20	0.63
6/4/85	3.60	750.00	90.00	32.00	640.00	5.92	5.86	0.69	6.70	0.64
10/11/85	3.56	954.00	62.50	12e.00	795.00	1.45	0.30	0.29	6.40	0.71
4/25/86	1.61	709.00	47.10	98.90	396.00	1.60	1.82	0.34	6.60	0.73
6/6/86	2.55	828.00	75.40	29.90	840.00	4.25	1.76	0.81	6.30	0.84
8/1/86	0.00	220.00	20.80	13.00	670.00	5.07	1.65	0.21	6.20	0.69
10/24/86	0.00	763.00	69.20	29.90	577.00	4.11	6.19	2.90	5.80	0.88
1/22/87	3.30	1715.00	110.00	77.30	460.00	7.8e	2.16	1.15	6.40	0.44
4/17/87	1.90	405.00	46.60	7.80	680.00	6.60	2.30	0.33	6.30	0.90
8/21/87	6.43	2160.00	143.00	56.80	1040.00	4.50	1.60	0.40	5.80	0.72
9/18/87	-	1280.00	-	-	-	-	-	-	-	-
12/24/87	3.92	1090.00	129.00	43.20	790.00	1.20	0.30	0.16	6.30	0.77
3/10/88	5.21	1460.00	153.00	39.20	509.00	0.33	0.11	0.40	6.50	0.78
7/29/88	3.00	1400.00	115.00	20.50	400.00	5.38	2.29	0.52	6.60	0.55
AVE	3.55	1595.36	143.54	102.82	677.71	3.70	2.27	0.65	6.35	0.72

City of Melbourne

(305) 727-2900

900 East Strawbridge Avenue

Melbourne, Florida
32901

December 9, 1988

Mr. Brian Moore
Florida Department of Environmental Regulation
Bureau of Waste Cleanup
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Moore:

Enclosed is all the information my staff could find regarding your request of November 1, 1988. I hope this information aids you in your file updating.

If I can be of further assistance, do not hesitate to contact me.

Sincerely,

Robert C. Klaproth, Jr.
Water/Sewer Administrator

RCK/ah
enclosed

M E M O

TO : BOB KLAPROTH
ADMINISTRATOR/WS

THRU : FRED DUNHAM
SUPERINTENDENT/WWTP

FROM : RANDALL GREER
IPP COORDINATOR

DATE : NOVEMBER 14, 1988

SUBJECT : SLUDGE SPREADING SITES

Prior to the start up of the belt filter press @ D.B. Lee and Grant Street, digested sludge was disposed of via land spreading with tank trucks.

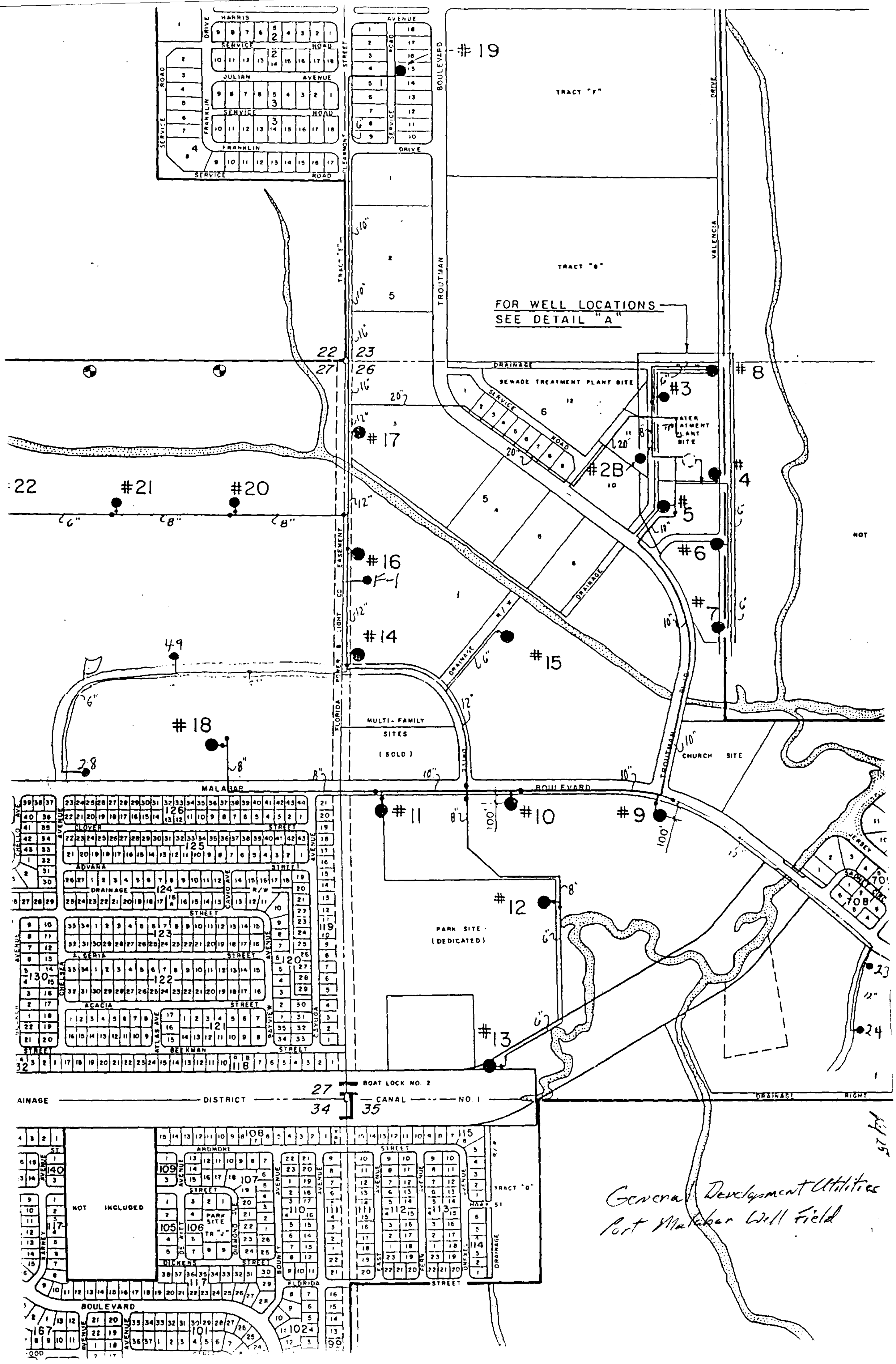
Hauling seven days a week, the average rate of spread was 4.4 M.G. per week over the course of a year.

The sludge quality was Grade II, due to industrial contributors.

Advanced Board Circuitries contributed copper to the D.B. Lee POTW while FAR-MAC Plating contributed Nickel to Grant Street.

Randall S Greer

RANDALL GREER



General Development Utilities
Port Malabar Well Field

Chemical Criteria in mg/kg dry weight

Parameter	Sludge Grade I	II	III
Cadmium	<=30	30--100	>100
Copper	<=900	900--3000	>3000
Lead	<=1000	1000--1500	>1500
Nickel	<=100	100--500	>500
Zinc	<=1800	1800--10000	>10000

SLUDGE QUALITY: Grant Street WWTP

DATE	Cd mg/kg	Cu mg/kg	Pb mg/kg	Ni mg/kg	Zn mg/kg	Tot.N %	Tot.P %	Tot.K %	Solids %	pH
8/23/84	2.18	250.00	162.00	109.00	573.00	0.67	2.26	0.12	2.06	7.00
10/18/84	1.00	280.00	35.00	235.00	752.00	0.04	1.80	0.03	2.13	6.20
6/4/85	5.50	290.00	60.00	235.00	930.00	1.61	3.05	0.13	2.44	6.50
10/11/85	2.15	138.00	16.10	110.00	448.00	0.46	0.07	0.51	2.85	5.70
4/18/86	2.60	252.00	29.20	113.00	566.00	4.20	0.11	0.31	2.43	6.40
5/23/86	-			72.90						
6/6/86	2.79	207.00	48.20	61.20	550.00	3.01	0.70	0.21	2.79	6.30
8/1/86	1.72	75.00	31.00	36.00	400.00	4.00	0.06	0.17	1.76	6.20
10/24/86	0.00	144.00	33.30	42.50	442.00	1.68	1.48	4.82	1.76	5.70
1/22/87	2.30	159.00	58.00	25.20	413.00	1.05	0.13	1.28	0.86	6.50
4/17/87	1.80	127.00	37.20	18.80	405.00	6.50	0.86	0.11	2.57	5.50
7/22/87	2.46	226.00	29.00	35.70	598.00	3.00	0.50	0.10	2.35	6.30
12/24/87	1.82	174.00	54.50	25.30	518.00	1.30	0.28	0.08	3.00	5.50
3/31/88	4.40	346.00	88.80	44.30	782.00	0.76	0.27	0.56	0.82	6.80
7/29/88	5.00	465.00	76.00	19.00	900.00	3.22	0.45	0.43	1.70	6.40
AVE	2.55	223.79	54.16	78.66	591.21	2.25	0.66	0.63	2.10	6.21

MCCLENONS PROPERTY
FLD980556484
PRELIMINARY ASSESSMENT

A. SITE DESCRIPTION. The McClenons Property site (site #3) is located on Florida Ave. (off Dairy Road), Melbourne, Brevard County, Florida (Fig. 1) [3,6]. This site accepted electroplating sludge containing lead and chromium. It began operation in 1979 and closed in 1981 [3].

B. DESCRIPTION OF HAZARDOUS CONDITIONS, INCIDENTS AND PERMIT VIOLATIONS. McClenons Property is one of 8 sites where the City of Melbourne disposed electroplating sludge [3]. The other 7 sites had Preliminary Assessments written in 1982 [3].

Chromium (total, trivalent and hexavalent) and lead are commonly used in electroplating [5]. Chromium electroplating processes use insoluble lead alloy anodes. Chromium is a common metal constituent used in anodizing baths, which results in high chromium levels in waste streams. Pickling or acid cleaning solutions frequently contain chromic acid. Significant pollutants and pollutant properties from electroplating operations are pH, total suspended solids, cyanide, chromium, copper, nickel, zinc, cadmium, lead and various precious metals and organic compounds [5]. Metals that are not destroyed in the process are incorporated into sludge. These metals could contaminate the air, water and in some cases enter the human food chain. Metals incorporated in the sludge can have detrimental effects which limit the amount of sludge which can be applied to cropland. Data indicate that sludge containing lead, when applied to cropland, may increase the lead concentration in crops grown on acid soils [5].

No additional information is currently available for this site and no samples have been collected to date.

C. RCRA STATUS. This site has no official RCRA status. However, the wastes disposed at the site may be RCRA regulated and therefore this report will be forwarded to RCRA personnel for their review.

D. NATURE OF HAZARDOUS MATERIALS. Chromium and lead are suspected carcinogens and are used in the electroplating industry[4,5]. Exposure to chromium compounds (chromic acid) can lead to lesions, ulcers and damage to the respiratory tract [4,7]. Hexavalent chromium is corrosive and a potent human skin sensitizer [5]. Lead is bioaccumulative, toxic and persistent [4,5,7]. Cyanide, a common component of electroplating wastewaters, is toxic and affects the liver and kidneys [5,12].

E. ROUTES OF CONTAMINATION. Groundwater and surface water are potential routes of contamination. Direct contact is another potential route.

F. POSSIBLE AFFECTED POPULATION AND RESOURCES. The major source of groundwater in Brevard County (used mostly for irrigation) is the limestone formations of the artesian Floridan aquifer [1,2]. This aquifer, from top to bottom, consists of the Crystal River, Williston and the Inglis formations. The Crystal River formation (up to 100 feet thick) is a white to cream colored, soft, brittle limestone which underlies the southern part of Brevard County. The Williston formation (approx. 30 feet) is a cream colored marine limestone. The Inglis formation (50-100 feet) is the same composition as the Williston formation, with the exception of being more granular [1]. The Floridan aquifer sets approximately 250 feet below grade at McClenons Property and is overlain by a sand and clay confining layer [1,2]. The Pleistocene and Recent sand/shell deposits form a surficial aquifer that serves as an alternate source of water for domestic uses not supplied by municipal water systems [1].

Groundwater flow in the surficial aquifer can vary due to the proximity of the site to a water table divide [1].

The major source of drinking water for the residents of Melbourne comes from Lake Washington, whose intakes are more than 3 miles from McClenons Property (Fig. 1)[3,6,8]. The nearest surface waters are 100 feet to 1/4 mile from the site (Fig. 1) [6].

There are at least 47 private drinking water wells within 3 miles of the site and the nearest well (Floridan aquifer) is within 1 mile of the site [6,9].

G. RECOMMENDATIONS AND JUSTIFICATIONS. The aquifer of concern (Floridan aquifer) is confined and is more than 250 feet deep in the area [1,2]. The potential for contaminants to infiltrate down to the aquifer is extremely low [1,2].

Since few wells or surface water intakes are nearby and a low population is potentially affected, we recommend a no further action for CERCLA Site Screening Inspection and request that the site be forwarded to RCRA for appropriate action.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 1 - SITE INFORMATION AND ASSESSMENT

IDENTIFICATION
01 STATE: FL | 02 SITE NUMBER: D980556484

II. SITE NAME AND LOCATION

01 SITE NAME(Legal, common or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
McClenons Property [3]	Florida Ave. (off Dairy Road)				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Melbourne	FL	32901	Brevard	009	11

09 COORDINATES [3,6]: LATITUDE 28° 03' 18.0" N | LONGITUDE 80° 38' 26.0" W

10 DIRECTIONS TO SITE(Starting from nearest public road)
Take I-95 south to 192 east. Go 4.2 miles to Dairy Road. Go south on Dairy Road 1.5 miles to Florida Ave. The site is 1/4 mile west on Florida Ave.

RESPONSIBLE PARTIES

01 OWNER(If known)	02 STREET(Business, mailing, residential)		
Samuel H. Halter, City Manager [3]	900 E. Strawbridge Ave.		
03 CITY	04 STATE	05 ZIP CODE	06 TELEPHONE NUMBER
Melbourne	FL	32901	( ) -
07 OPERATOR(If known and different from owner)	08 STREET(Business, mailing, residential)		
Robert Kelly, Superintendent			
09 CITY	10 STATE	11 ZIP CODE	12 TELEPHONE NUMBER
Melbourne	FL	32901	(305)727-2900

13 TYPE OF OWNERSHIP(Check one)
__ A. PRIVATE __ B. FEDERAL: _____ (Agency Name) __ C. STATE __ D. COUNTY __ E. MUNICIPAL
X F. OTHER: City (Specify) __ G. UNKNOWN

14 OWNER/OPERATOR NOTIFICATION ON FILE(Check all that apply)
__ A. RCRA 3001 DATE RECEIVED: ___/___/___ (MONTH DAY YEAR)
X B. UNCONTROLLED WASTE SITE(Cercla 103 c) DATE RECEIVED: 6 / 5 / 81 (MONTH DATE YEAR) [3]
__ C. NONE

IV. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION
__ YES DATE ___/___/___ (MONTH DAY YEAR)
X NO

BY(Check all that apply)
__ A. EPA __ B. EPA CONTRACTOR __ C. STATE __ D. OTHER CONTRACTOR
__ E. LOCAL HEALTH OFFICIAL __ OTHER: _____ (Specify)
CONTRACTOR NAME(S): _____

02 SITE STATUS(Check one)	03 YEARS OF OPERATION		
__ A. ACTIVE X B. INACTIVE __ C. UNKNOWN	1979 (BEGINNING YEAR)	1981 (ENDING YEAR) [3]	__ UNKNOWN

04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED
Known pollutants generated during electroplating include: cyanide, chromium, copper, nickel, zinc, cadmium, lead and various precious metals [5]. EPA was notified that sludge containing chromium and lead was being and had been dumped at the site [3,5].

05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION
Chromium and lead are suspected carcinogens. Lead is also bioaccumulative, toxic and persistent [4,5,7]. Residents with nearby shallow (surficial aquifer) wells could be exposed to potential contaminants from the site [1,6,9].

V. PRIORITY ASSESSMENT

01 PRIORITY FOR INSPECTION(Check one. If high or medium is checked, complete Part 3-Description of Conditions)
__ A. HIGH (Inspection required promptly)
__ B. MEDIUM (Inspection Required)
__ C. LOW (Inspect on time available basis)
X D. NONE (No further action needed, complete disposition form)

VI. INFORMATION AVAILABLE FROM

01 Contact	02 OF(Agency Organization)			03 Telephone Number
Eric S. Nuzie	FDER			(904)488-0190
04 Person Responsible for Assessment	05 Agency	06 Organization	07 Tel. No.	08 Date
Mary L. Lubinski/Jim McCarthy	FDER	BOO	(904)488-0190	9 / 25 / 87 (Mo. DAY YEAR)

EPA FORM 2070-12(7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 2 -WASTE INFORMATION

IDENTIFICATION	
01 STATE	02 SITE NUMBER
FL	D980556484

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

__ A. SOLID
__ B. POWDER, FINES
X C. SLUDGE
__ E. SLURRY
__ F. LIQUID
__ G. GAS
__ OTHER _____ (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS unknown
CUBIC YARDS unknown
NO. OF DRUMS unknown

WASTE CHARACTERISTICS (Check all that apply)

X A. TOXIC
X B. CORROSIVE
__ C. RADIOACTIVE
X D. PERSISTENT
__ E. SOLUBLE
__ F. INFECTIOUS
__ G. FLAMMABLE
__ H. IGNITABLE
__ I. HIGHLY VOLATILE
__ J. EXPLOSIVE
__ K. REACTIVE
__ L. INCOMPATIBLE
__ M NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			Electroplating sludge containing heavy metals (lead and chromium) has been disposed of at this site [3,5].
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	unknown	N/A	Chromium and lead are suspected carcinogens and are commonly used in the electroplating industry [5,7].

IV HAZARDOUS SUBSTANCES (See appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 REFERENCES
MES	chromium	7440-47-3	in sludge/unknown		[3]
MES	lead	7439-92-1	in sludge/unknown		[3]

V. FEEDSTOCKS (See Appendix for CAS Numbers) N/A

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific reference, e.g., state files, sample analysis, reports)

Bureau of Operations, FDER files, and attached reference list.

EPA	POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND ACCIDENTS	IDENTIFICATION 01 STATE: FL 02 SITE NUMBER: FD980556484

II. HAZARDOUS CONDITIONS AND INCIDENTS (continued)

01 __ J. DAMAGE TO FLORA — 02 __ OBSERVED(DATE:_____) __ POTENTIAL __ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

01 __ K. DAMAGE TO FAUNA — 02 __ OBSERVED(DATE: _____) __ POTENTIAL __ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

01 X L. CONTAMINATION OF FOOD CHAIN — 02 __ OBSERVED(DATE: _____) X POTENTIAL __ ALLEGED
04 NARRATIVE DESCRIPTION

Sludge containing lead or chromium, when applied to cropland, can have detremental effects on the yield and increase the concentrations of contaminants in the crop [5]. Lead is bioaccumulative [4,5].

01 __ M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums) — 02 __ OBSERVED(DATE: _____) __ POTENTIAL __ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 __ NARRATIVE DESCRIPTION

None reported.

01 __ N. DAMAGE TO OFFSITE PROPERTY — 02 __ OBSERVED(DATE: _____) __ POTENTIAL __ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

01 __ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 __ OBSERVED(DATE: _____) __ POTENTIAL __ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

01 __ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 __ OBSERVED(DATE: _____) __ POTENTIAL __ ALLEGED
04 NARRATIVE DESCRIPTION

None reported.

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

None reported.

III. TOTAL POPULATION POTENTIALLY AFFECTED: 1-100

IV. COMMENTS

McClenons property accepted electroplating sludge containing lead and chromium from 1979 to 1981 [3]. Residents of Melbourne receive their drinking water from Lake Washington [8], which is more than 3 miles from the site [6]. The aquifer of concern (Floridan aquifer) is confined and more than 250 feet deep in this area. The potential for contaminants to infiltrate down to the aquifer is extremely low [1,2].

V. SOURCES OF INFORMATION (Cite specific reference, e.g., state files, sample analysis, reports)

FDER files, also see attached reference list.

EPA

POTENTIAL HAZARDOUS WASTE SITE
PRELIMINARY ASSESSMENT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND ACCIDENTS

IDENTIFICATION	
01 STATE	02 SITE NUMBER
FL	D980556484

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 X A. GROUNDWATER CONTAMINATION — 02 __ OBSERVED(DATE: ____) X POTENTIAL __ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1-100 — 04 NARRATIVE DESCRIPTION

The Floridan aquifer sets at 250 feet below grade and is overlain by sand and clay at the McClenons property site and, therefore, is not susceptible to contamination [1]. Residents with private wells screened in the surficial (sand/shell) aquifer are potentially at risk [1,3,5,7,12]. No samples have been collected.

---

01 __ B. SURFACE WATER CONTAMINATION — 02 __ OBSERVED(DATE: ____) __ POTENTIAL __ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____ — 04 NARRATIVE DESCRIPTION

None reported.

---

01 __ C. CONTAMINATION OF AIR — 02 __ OBSERVED(DATE: ____) __ POTENTIAL __ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____ — 04 NARRATIVE DESCRIPTION

None reported.

---

01 __ D. FIRE/EXPLOSIVE CONDITIONS — 02 __ OBSERVED(DATE: ____) __ POTENTIAL __ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____ — 04 NARRATIVE DESCRIPTION

None reported.

---

01 __ E. DIRECT CONTACT — 02 __ OBSERVED(DATE: ____) __ POTENTIAL __ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: ____ — 04 __ NARRATIVE DESCRIPTION

Remote potential. The site is located in an undeveloped and rural area [3,6,14].

---

01 X F. CONTAMINATION OF SOIL — 02 __ OBSERVED(DATE: ____) X POTENTIAL __ ALLEGED
03 AREA POTENTIALLY AFFECTED: unknown (Acres) — 04 NARRATIVE DESCRIPTION

Contaminants (lead and chromium) in sludge dumped at the sites could leach into the soil [3,4,5,7].

---

01 X G. DRINKING WATER CONTAMINATION — 02 __ OBSERVED(DATE: ____) X POTENTIAL __ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1-100 — 04 NARRATIVE DESCRIPTION

Most area residents are supplied by the Melbourne municipal system (Lake Washington) whose surface water intakes are more than 3 miles from the site [6,8]. A few private shallow drinking water wells near the site could be exposed to potential contaminants from the site [1,3,5].

---

01 __ H. WORKER EXPOSED/INJURY — 02 __ OBSERVED(DATE: ____) __ POTENTIAL __ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: ____ — 04 NARRATIVE DESCRIPTION

None reported. The site is currently inactive [3,14].

---

01 X I. POPULATION EXPOSURE/INJURY — 02 __ OBSERVED(DATE: ____) X POTENTIAL __ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 1-100 — 04 NARRATIVE DESCRIPTION

Residents with shallow surficial aquifer wells could be exposed to suspected carcinogens (chromium and lead) found in the electroplating sludge [1,3,4,5,7].

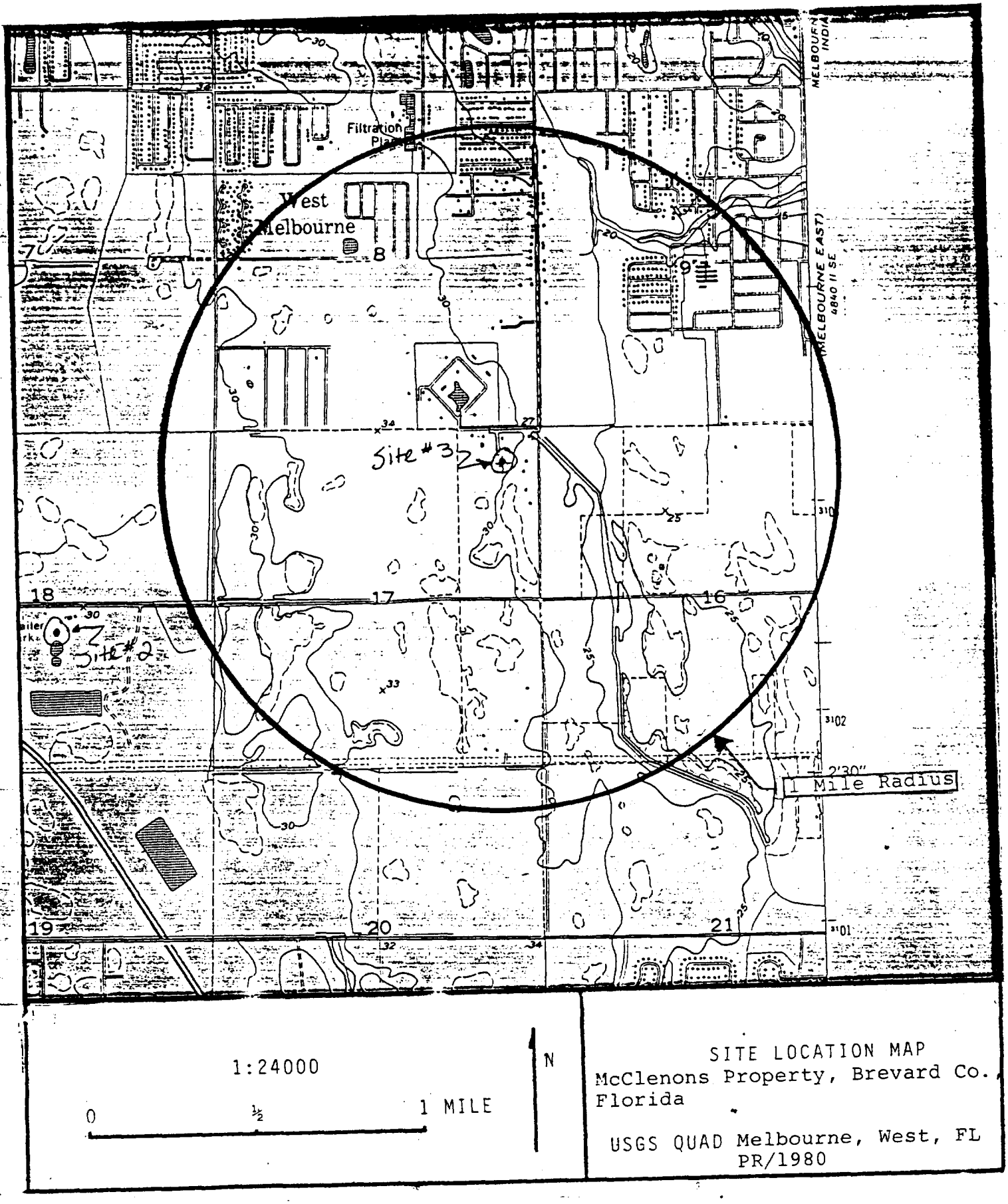

West Melbourne
Filtration Plant
Site #3
Site #2
1 Mile Radius
MELBOURNE EAST)
4840 II SE
1:24000
0
½
1 MILE
N
SITE LOCATION MAP
McClenons Property, Brevard Co., Florida
USGS QUAD Melbourne, West, FL
PR/1980

Fig. 1

SITE SCREENING SUMMARY

Site Name: McClenons Property **EPA ID #:** FLD980556484

Reviewer Name: Mary L. Lubinski/Jim McCarthy **Date:** 9/22/87

I. **INITIAL REVIEW:** **(Check where appropriate)** NPL___ RCRA X Fed. Fac.___ "Low Priority" Landfill___ NFA___

reason: RCRA regulated waste was discharged after Nov. 19, 1980 and there appears to be a financially viable responsible party [3,10,11].

II. **LEAD:** Fund___ Enforcement___ Unknown___

III. **REMOVAL:** Needed___ reason:

Completed___ (score using preremoval conditions)

IV. **HRS SCORE:** 11.26 Confidence: high___ medium___ low X

V. **LOCATION:** Latitude: 28° 03' 18" N Longitude: 80° 38' 26" W [3,6]

VI. **INFORMATION NEEDED:** **(Check information needed to determine disposition)**

A. **Preliminary Assessment** **(Notes/sources for future reference)**

X 1. RCRA Status Information: Final RCRA determination/USEPA.

___2. Observed Release: _____

___3. Target Information: _____

___4. Distance to Surface Water: _____

___5. Depth to aquifer of concern: _____

___6. Waste identity: _____

___7. Hazardous waste quantity: _____

___8. Others (list): _____

B. **Site Investigation**

___1. Waste identity: _____

___2. Distance to surface water: _____

___3. Slope/intervening terrain: _____

___4. Containment: _____

___5. Observed release (surface): _____

___6. Observed release (ground): _____

___7. Hazardous waste quantity: _____

___8. Others (list): _____

CRITICAL HRS FACTOR DOCUMENTATION FORM

SITE NAME: McClenons Property EPA ID #: FLD980556484

REVIEWER: Mary L. Lubinski/Jim McCarthy DATE: 9/25/87

1. Is an observed release documented (background and site samples are available and the site is shown to be the source of the contamination) or is one likely?

GROUNDWATER: Yes___ No X Likely___ SURFACE WATER: Yes___ No: X Likely___

Groundwater info source:

Surface water info source:

2. What is the depth at the site to the shallowest aquifer used locally for drinking water? (Floridan aquifer)

Depth: 250 feet. Known: X Estimated___ Unknown___

Source: [Ref. 1].

3. What is the distance to surface water from the hazardous waste?

Distance: 100 ft. - 1/4 mile. Known: X Estimated___ Unknown___

Source: [Fig. 1, Ref. 6].

4. What are the most toxic/persistent chemicals at the site? Unknown___

a) lead - T/P = 18 b) chromium - T/P = 18 c) cyanide - T/P = 12

Source: [Ref. 3,4,7,*].

5. What is the hazardous waste quantity?

Quantity: 1 drum (default) Known:___ Estimated___ Unknown X

Source: [Ref. 3].

6. What is the distance to the nearest public water supply well using the aquifer of concern and what is the population served?

Distance: > 3 miles. Known X Estimated___ Unknown___

Population: N/A. Known___ Estimated___ Unknown___

Source: [Ref. 6,8].

7. What is the distance to the nearest private water supply well using the aquifer of concern and what is the population served within 3 miles? (Floridan aquifer)

Distance: 1 mile. Known___ Estimated X Unknown___

Population: 178. Known___ Estimated X Unknown___

Source: [Ref. 6,9,*] 47 x 3.8 = 178.

8. What is the distance to the nearest downstream surface water intake and the population served?

Distance: > 3 miles. Known X Estimated___ Unknown___

Population: N/A. Known___ Estimated___ Unknown___

Source: [Ref. 6,8].

* Data Collection and Documentation Techniques for HRS Scoring of Hazardous Waste Sites. 3/87. NUS.

HRS SCORE SHEET DATE: 9/25/87

SITE NAME: McClenons Property

EPA ID #: FLD980556484 REVIEWER: Mary L. Lubinski/Jim McCarthy

HRS FACTOR SCORES		Score	Default	Known	Est.
1) Toxicity/persistence (TP)	[3,4,5,7,*]	8	none	X	
2) Waste quantity (WQ)		1	X(1)		
3) Containment (Groundwater) (C_{gw})		3	X(3)		
4) Depth to aquifer of concern (D_{ac})	[1,2,*]	0	(6)	X	
5) Distance to nearest well/population (DP_g)		16	none		X
6) Containment (Surface Water) (C_{sw})		3	X(3)		
7) Distance to surface water (D_{sw})		6	(6)	X	
8) Distance to surface intake/population (DP_s)		0	none	X	

HRS GROUNDWATER ROUTE SCORING:

a) If observed release: $S_{gw} = \frac{(TP + WQ)(DP_g + 9)}{12.74}$ = N/A

b) If no observed release:
$S_{gw} = \frac{(D_{ac} + 7)(TP + WQ)(DP_g + 9)(C_{gw})}{573.3}$ = 17.40

HRS SURFACE WATER ROUTE SCORING

a) If observed release: $S_{sw} = \frac{(TP + WQ)(DP_s + 9)}{14.3}$ = N/A

b) If no observed release:
$S_{sw} = \frac{(D_{sw} + 5)(TP + WQ)(DP_s + 9)(C_{sw})}{643.5}$ = 8.77

MULTIMEDIA HRS SCORING

Do not score the air route unless an observed release is known to have occurred.

S_m = the square root of $S_{gw}^2 + S_{sw}^2/1.73$ = 11.26

The scoring in above steps is based on the following default scores:

1) the sum of the scores for net precipitation, permeability, and physical state is 7,
2) the groundwater use is for drinking and the score used is 9,
3) the sum of the scores for slope/terrain, rainfall and physical state is 5,
4) the sum of the scores for surface water use and distance to sensitive environments is 9.

If these assumptions are known to be substantially incorrect, complete an HRS scoring sheet.

REFERENCES

Reference Number	Description of Reference
1.	Brown, D.W., W.E. Kenner, J.W. Crooks and J.B. Foster. 1962. USGS Water Resources of Brevard Co., Florida. RI No. 28.
2.	Brown, D,W,, W.E. Kenner, J.W. Crooks and J.B. Foster. 1962. Water Resources Records of Brevard Co., Florida. IC 32.
3.	Environmental Protection Agency. 6/5/81. Notification of Hazardous Waste Site.
4.	Sax, N. Irving. 1984. Dangerous Properties of Industrial Materials, Sixth Edition. Van Nostrand Reinhold Company.
5.	Environmental Protection Agency. 1979. Development Document for Existing Source Pretreatment Standards for the Electroplating Point Source Category.
6.	Topographic maps. PR/1980. Melbourne West.
7.	Sittig, M. 1976. Toxic Metals - Pollution Control and Worker Protection. Noyes Publications, Park Ridge, N.J.
8.	Healy, H. 1977. Public Water Supplies of Selected Municipalities in Florida, 1975. USGS. WRI 77-53.
9.	Well Data. 9/23/87. Water Well Construction Permit - St. Johns Water Management District.
10.	USEPA. 11/25/86. Site Screening Guidance.
11.	Appendix. Unlisted (Characteristic) Hazardous Wastes (40 CFR Part 261, Subpart C) and Lists of Hazardous Wastes (40 CFR Part 261, Subpart D).
12.	Sittig, M. (ed.). 1985. Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2nd Edition. Noyes Publications, Park Ridge, New Jersey.
13.	McCartny, J. to E. Nuzie. 9/30/87. RCRA Status Memo.
14.	McGarrity, J. 9/28/87. Windshield Survey.

CONVERSATION RECORD Reference 17

Date: 12/14/89

Time: 4:20 PM

File Name: Melbourne Sludge Sites

Contact Person: Bob Rumble

Phone No.: (407) 269-8190

Subject: Ownership of the sites

Bob Rumble with the Brevard County Property Apparaisers office relayed to me the following information concerning owner ship of the sludge sites.

Mosier's Property is 60.97 Acres registered under the name of Pine Lakes Mobile Home Estates Inc. at the address of 2505 Eber Blvd. An R.P. Mosier is listed at that address in the Melbourne phone book. Bob described the property as: The northern border is Eber Rd. The southern border runs east-west and is 200 feet north of the barrow pit. The SE corner is 300 feet east of the NE corner of the pit. The SW corner is 950 feet west of the NW corner of the pit.

Most of the Evan's Property site is covered by the Melbourne Square Mall with is owned by the DeBartelo Corp. of Youngstown, Ohio under the name - Melbourne-JCP Associates , 7620 Market St. Youngstown, Ohio 44512. Evans-Butler Realty Co., 1333 Gateway Dr. (727-1000) is advertising to sell a portion of undeveloped land east of Evan's Rd. The mall property covers 50.97 Acres.

The McClenon's Property is owned by Helen McClenon of 3075 Florida Ave., Melbourne 32904, and consists of lots 30 and 31 of the Indian River Land Co. Land, also described as the west ½ of the NE of the NE of Sc. 17, and the east ½ of the NW of the NE of Sc. 17.

Reproductions of Tax maps can be had by request of the Brevard County Appraiser's Office. The cost is $3 per section.

CONVERSATION RECORD — Reference 18

Date: 12/14/88

Time: 3pm

File Name: Mosier's Property

Contact Person: Lee Miller

Phone No.: (Sun) 325-1011

Subject: Sludge Analyses

Mr Miller with FLDER Orlando found no information the the files for Melbourne's D.B. Lee or Grant St. WWT Plants. "Bill Bostwick may remember something which occured during that time"

Greg Noble with BIS Tallahassee found nothing in the GMS Data Bank under Sludge Generation or Disposal for the two plants.

Brian Moore

Reference 19

3319 MAGUIRE BOULEVARD
SUITE 232
ORLANDO, FLORIDA 32803

BOB GRAHAM
GOVERNOR
Victoria J. Tschinkel
SECRETARY
ALEX SENKEVICH
DISTRICT MANAGER

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

ST. JOHNS RIVER DISTRICT

RECONNAISSANCE INSPECTION REPORT

Source Name: Advanced Board Circuitries, Inc. (FLD-065912966)

Source Location: 600 C North John Rodes Boulevard W. Melbourne, FL

Person Contacted: Walter Wall Title: Engineering Manager

Purpose of Inspection: To determine the status of the above-mentioned site in regard to the current hazardous waste regulations.

Comments: On December 11, 1981, at approximately 1:40 P.M., the above-mentioned site was inspected by the writer. Mr. Walter Wall, Engineering Manager, ABC and Mr. David Hamel, Safety Director, Documation, Inc., accompanied me during my inspection of the facility. ABC employs approximately 243 employees in the production of Printed Circuit Boards.

Waste generated as a result of production includes the following:

A. Spent electroplating solutions
   1) Copper solution — Drum-disposal
   2) Tin solution — Drum-disposal
   3) Spent Palladium catalyst — Drum-reclaim
   4) Gold solution — Reclaimed

B. Spent solvents
   1) Trichloroethylene — Drum — Disposal/reclaim.

C. Photochemical solutions
   1) Fixers — Sanitary sewer
   2) Developers — Sanitary sewer

D. Spent cleanfluids from silkscreening
   1) TRS cleaning fluid — Sanitary sewer

E. Electroplating rinsewaters — pH adjustment — sanitary sewers
   Cu - five ppm 5.0
   Pb - two ppm 2.0

Indicate Corrective Action(s) to be Undertaken by DER District Office: contact receiving POTW regarding metals in discharge to sewer system.

Individual Assigned Responsibility for Corrective Action(s): Clifford Miller Title: ES II

PRINTED CIRCUIT BOARD PRODUCTION

I. Design

The board is designed according to the desired electronic configuration. The design is produced and photographically reproduced on to the board.

II. Drilling

The board has drill holes drilled automatically according to the desired design.

III. Electroplating

The electroplating and filming process is illustrated on the following pages. Rinsewater waste is pH adjusted before entering the sanitary sewer. According to Mr. Wall, three hundred (300) gallons per minute of wastewater is discharged into the sanitary sewer. This wastewater contains five (5.0) ppm (Cu) Copper and two (2.0) ppm (Pb) Lead. Spent electroplating solutions are drummed in (55) fifty-five gallon drums for disposal in Michigan by Chemcon Corporation of Zellwood, FL. Approximately 80 drums of waste are generated per month. Gold and other precious metals are reclaimed.

IV. Silk Screening

The plant operates a small silk screening process. Silk screens are cleaned with TRS cleaning fluid which is discharged to the sanitary sewer.

Waste Management

I. Hazardous wastes appeared to be managed properly and in compliance with the hazardous waste regulations. There is concern regarding the metals being discharged into the sanitary sewer. This facility plans to begin treatment for metals in July, 1982. At that time, they will be a TSD (treatment) facility. In the interim, close attention should be given to their wastewater.

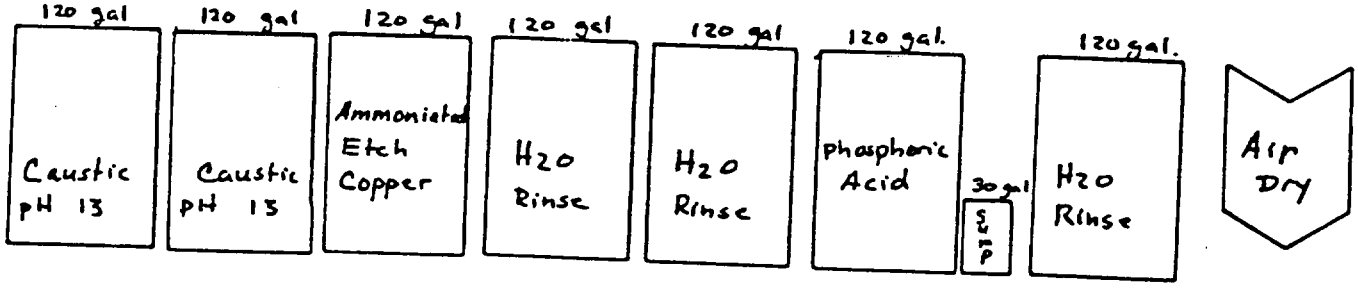
At the time of my inspection, the following hazardous wastes were on-site:

Spent electroplating solution - 56 fifty-five gallon drums.

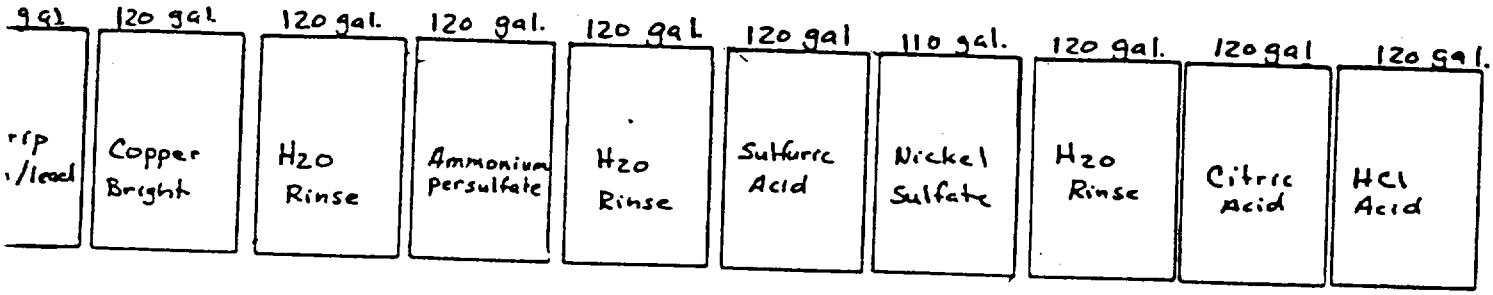
Spent Tin/Lead electroplating solution - 12 fifty-five gallon drums.

Spent degreasing solvents - 14 fifty-five gallon drums.

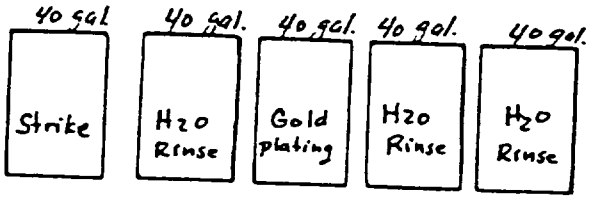
Electroplating processes - See following page.

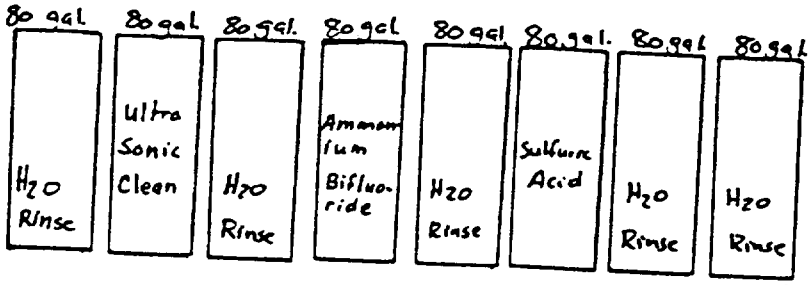


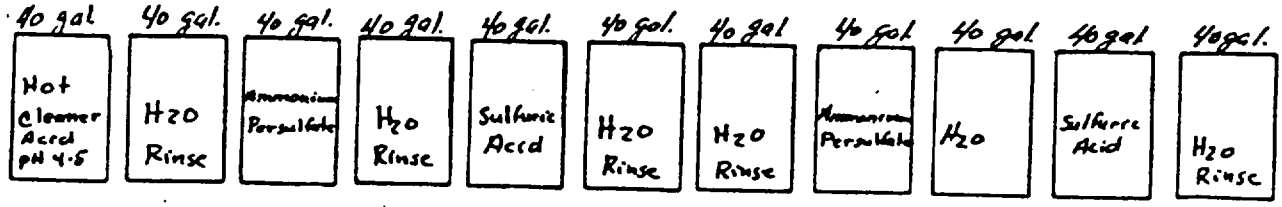
Nickel Electroplating

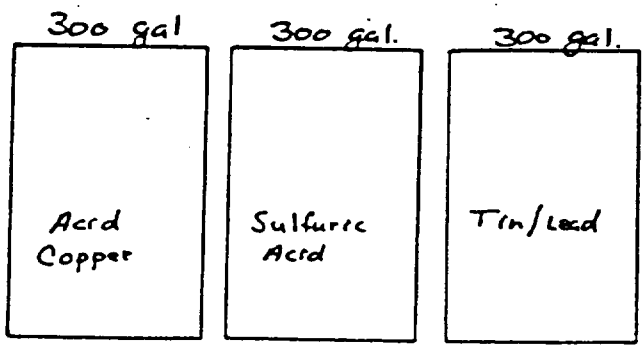


Gold Electroplating

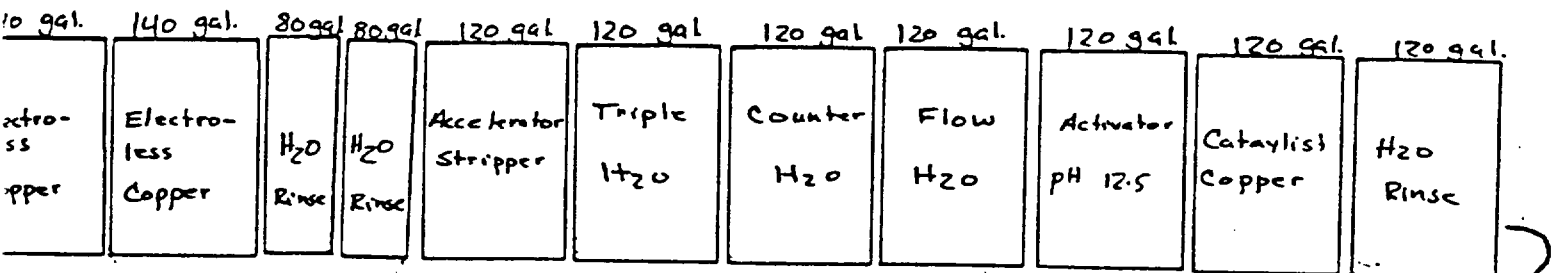


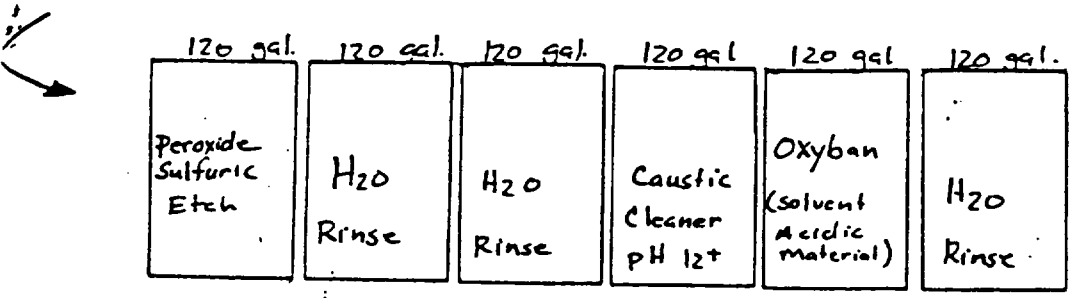




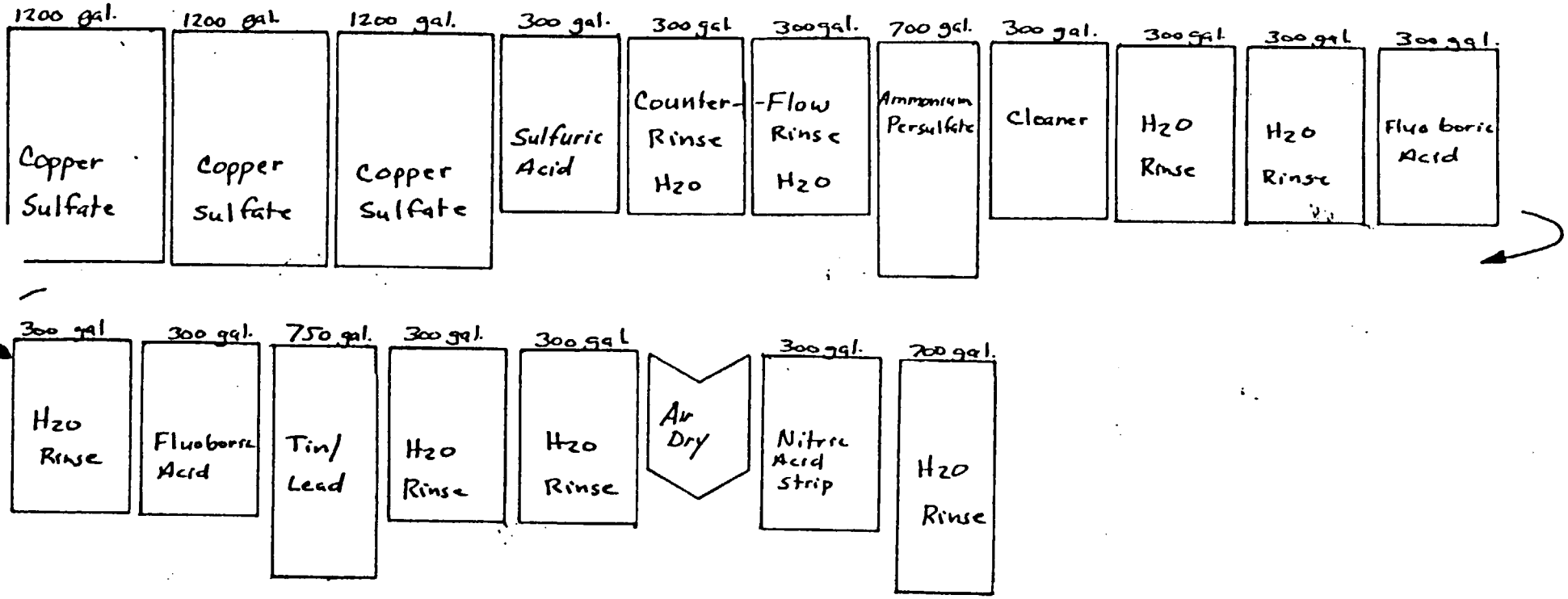


Automatic Electroless Copper Tin/lead Plating

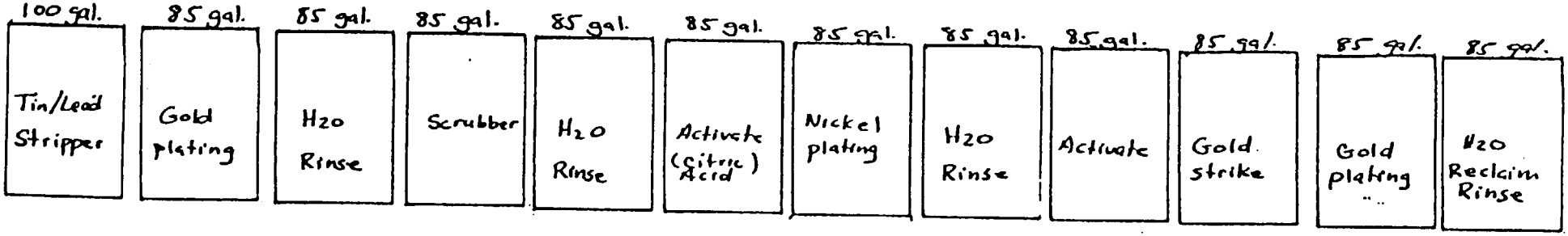




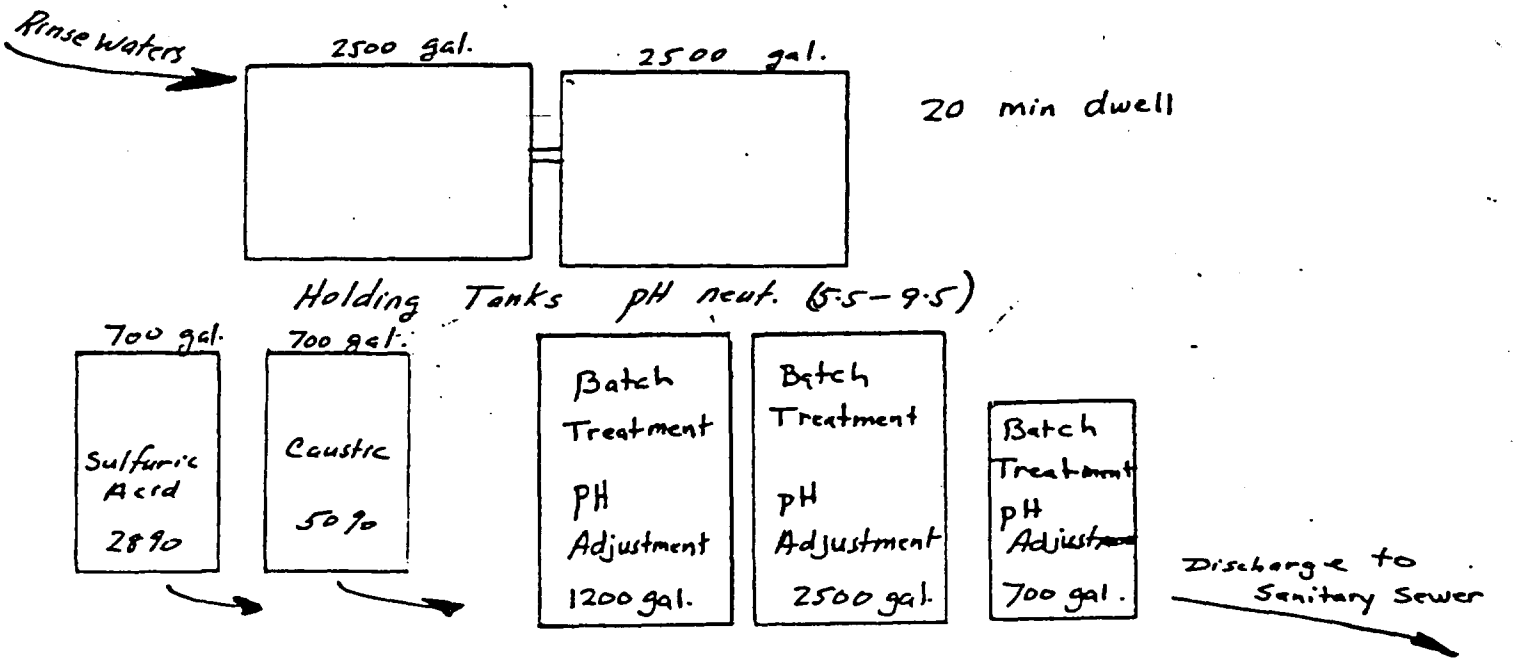
Automatic Plating Copper Tin/Lead



Automatic Plating Gold



Rinsewater Batch Treatment system - pH Adjustment



Type or print in the unshaded areas only
(Shaded areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-R0175

FORM 1 GENERAL

EPA

ENVIRONMENTAL PROTECTION AGENCY

GENERAL INFORMATION

Consolidated Permits Program

(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER

F FLD 065912966 | 3 | D

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

LABEL ITEMS

EPA I.D. NUMBER

FACILITY NAME

FACILITY MAILING ADDRESS

FACILITY LOCATION

U09132

PLEASE PLACE LABEL IN THIS SPACE

EPA/REGION IV

POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X' YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X	
B. Does or will this facility *(either existing or proposed)* include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X		
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X		
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

NAME OF FACILITY

SKIP A D V A N C E D B O A R D C I R C U I T R I E S

FACILITY CONTACT

A. NAME & TITLE (last, first, & title): WALL, WALTER PROCESS ENGINEER

B. PHONE (area code & no.): 305 254- 7320

FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX: 600 C North John Rodes Blvd,

B. CITY OR TOWN: Melbourne,

C. STATE: FL.

D. ZIP CODE: 32935

FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: 600 C North John Rodes Blvd,

B. COUNTY NAME: Brevard

CITY OR TOWN	STATE	E. ZIP CODE	F. COUNTY CODE (if known)
Melbourne,	FL	32935	

CONTINUE ON REVERSE

U.S. ENVIRONMENTAL PROTECTION AGENCY

EPA HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER: F L D 0 6 5 9 1 2 9 6 6 3 1

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's I.D. Number in Item I above.

FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

[X] 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

YR.	MO.	DAY
7 4	0 8	0 1

[ ] 2. NEW FACILITY *(Complete item below.)*

FOR NEW FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

YR.	MO.	DAY

REVISED APPLICATION *(place an "X" below and complete Item I above)*

[ ] 1. FACILITY HAS INTERIM STATUS

[ ] 2. FACILITY HAS A RCRA PERMIT

PROCESSES – CODES AND DESIGN CAPACITIES

PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

- AMOUNT – Enter the amount.
- UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
LITERS	L
CUBIC YARDS	Y
CUBIC METERS	C
GALLONS PER DAY	U
LITERS PER DAY	V
TONS PER HOUR	D
METRIC TONS PER HOUR	W
GALLONS PER HOUR	E
LITERS PER HOUR	H
ACRE-FEET	A
HECTARE-METER	F
ACRES	B
HECTARES	Q

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

DUP T/A C 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	0 2	600	G	
X-2	0 3	20	E	
1	0 1	1000	G	
2	0 2	2500	G	
3	0 1	20,000	G	
4				
5	T 0 1	60,000	L	
6				
7				
8				
9				
10				

CONTINUE ON REVERSE

m page 2.
copy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

I.D. NUMBER (enter from page 1): L D 0 6 5 9 1 2 9 6 | T/A C: 3 1

FOR OFFICIAL USE ONLY: W DUP | DUP

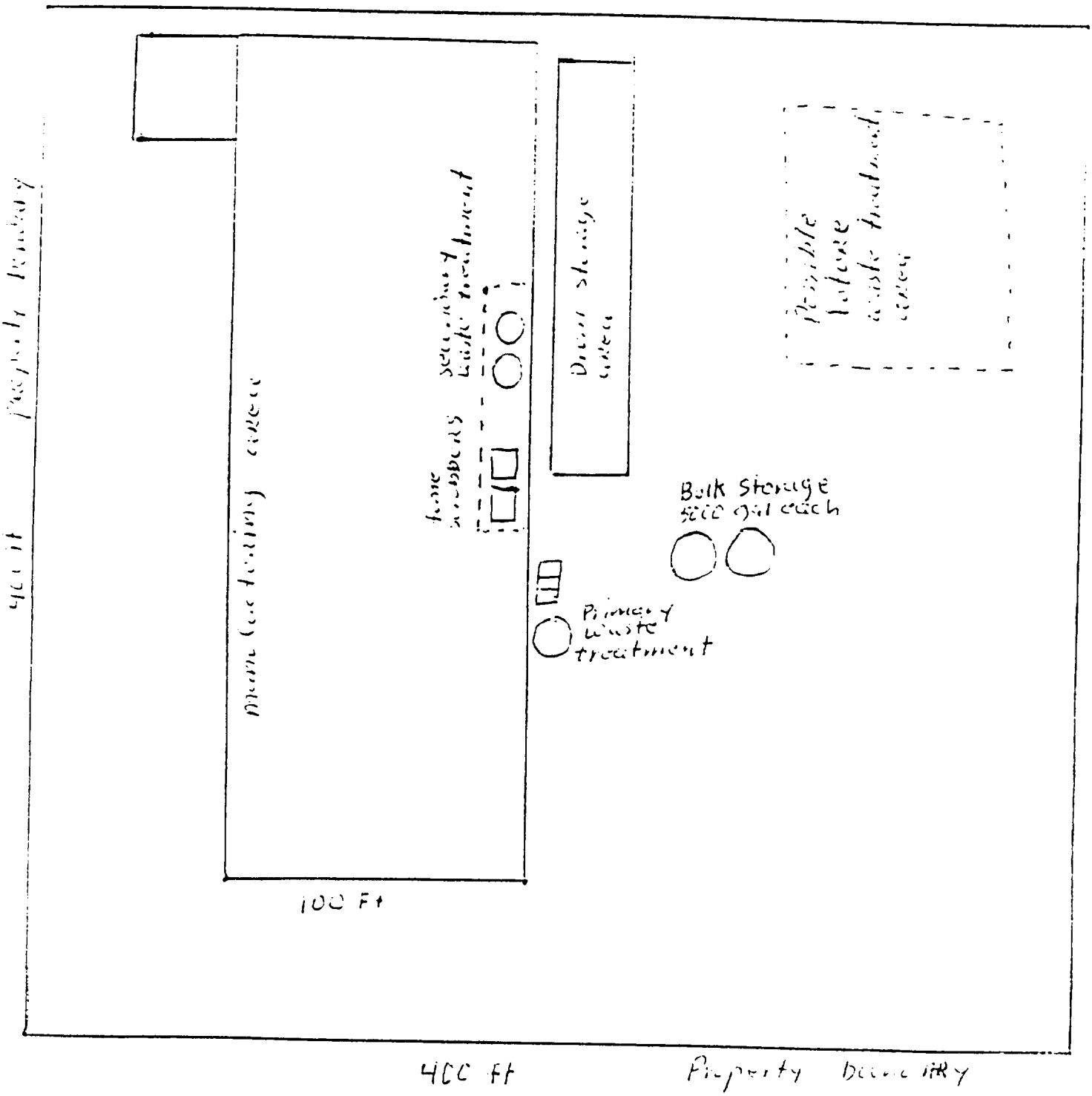
DESCRIPTION OF HAZARDOUS WASTES (continued)

A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)				2. PROCESS DESCRIPTION (if a code is not entered in D(1))
F006	500	P	~~D80~~	✓		S02	
F007	1500	P	~~D80~~	✓			
F008	100	P	~~D80~~	✓			
F009	10000	P	T01				

LITY DRAWING *(see page 4)*

Form Approved OMB No. 158-S80004

Reverse Beach Circuitry
Melbourne, Fla.



STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

ST. JOHNS RIVER DISTRICT
3319 MAGUIRE BOULEVARD
SUITE 232
ORLANDO, FLORIDA 32803-3767

BOB GRAHAM
GOVERNOR

VICTORIA J. TSCHINKEL
SECRETARY

A. ALEXANDER, P.E.
~~ALEX SENKEVICH~~
DISTRICT MANAGER

April 4, 1984

Mr. Sam Farless, General Manager
Far Mac Plating, Inc.
1015 South Eddie Allen Road
Melbourne, Florida 32901

OSJ-HW-84-0087

RECEIVED

APR 11 '84

Hazardous Waste

Dear Mr. Farless:

Brevard County - HW
Far Mac Plating, Inc.
FLD 064 816 424

An inspection on March 28, 1984 was made to determine whether your facility is in compliance with rules of the State of Florida, Chapter 17-30, Part III, Standards for Generators and Transporters of Hazardous Waste and Owners and Operators of Hazardous Waste Facilities. The attached report, RCRA Compliance Inspection Report, indicates that at this time the hazardous waste classification of your facility is a small-quantity generator and is in compliance.

If you have any questions, please contact the inspector, Mr. James B. Lee at (305) 894-7555.

Sincerely,

A. T. Sawicki

A. T. Sawicki, P.E.
Hazardous/Solid Waste
Engineering

cm JBL
ATS:jblc

Enclosure

cc: C. Diltz, DER-Tallahassee

2V

Brevard County - HW
Far Mac Plating, Inc.
FLD 064 816 424

NARRATIVE

On March 28, 1984, Messrs. James B. Lee and Jon Lucas, accompanied by Mr. Sam Farless of Far Mac Plating, Inc., inspected the facility for compliance with hazardous waste standards.

The Melbourne facility reconditions vehicle bumpers by straightening, stripping and polishing operation which generates copper cynide, chrome and nickel waste that is recycled (see sketch).

The strip room, which prepares the chrome and nickel parts to be processed, has two 1,000-gallon muratic acid solution tanks, a 950-gallon flowing rinse tank, and a 950-gallon spray rinse tank. The excess neutralized rinse water is discharged to the Melbourne-Grant Street Waste Water Treatment Plant. Tests are run periodically to ensure rinse waste water meets standards.

Since the last inspection of July 1, 1983, Far Mac Plating has modified its operation by replacing the continual flow chrome rinse step with a spray rinse step which reduces the amount of rinse water used. The rinse water is periodically returned to plating solution tank when the level is low. De-ionized water is added to the rinse tank. Twice a week, after the chrome plating process has gone through the rinse cycles, the chrome rinse water is directed into a 8' x 2.5' x 4' evaporation tank (80 cubic feet or 598 gallons). The remaining chrome concentrate from the boil down is returned back and reused in the chrome plating bath.

An aluminum caustic strip tank (200 gallons) has been added to prepare aluminum parts for anodizing. A 2% - 4% caustic soda solution is used for the anodizing operation conducted by Russell Brothers, Inc. located in Sanford, Florida. Periodically caustic soda is added to the tank. No waste is generated from this operation.

The de-ionized spray rinse water in the nickel process is placed in a catch tank and evaporated down. The remaining water and nickel concentrate is placed in the 1,000-gallon nickel plating solution for re-use. The rinse water is neutralized and discharged to the Melbourne-Grant Street Waste Water Treatment Plant.

Mr. Farless stated that the chrome evaporation process is being replaced within the next six months with an anion-cation exchange unit. This system is already in use at a Miami facility. The procedure will separate chrome and water into two separate products, thus recapturing the chrome and recycling it back into the plating bath.

Two 55-gallon containers of waste oil have been accumulated within the past several years. Mr. Farless was given a list of transporters to have these drums removed and properly disposed. No other waste is generated at the facility.

Far Mac Plating, Inc. is considered a small-quantity generator of hazardous waste. At the time of inspection, Far Mac Plating is in compliance with hazardous waste standards as per Chapter 17-30, Florida Administrative Code.

ATS:jblc

Brevard Co Comp Plan

Aquifer Recharge

An aquifer is a saturated geologic formation that can transmit significant quantities of water under ordinary hydraulic gradients (Freeze and Cherry, 1979) Within Brevard County there are two significant aquifers - the Floridan aquifer system and the surficial aquifer system.

The Floridan aquifer system is a thick carbonate rock (predominantly limestock) which includes all or part of the Paleocene to early Miocene Series, and contains water under confined conditions. In Brevard County, the chloride concentrations within most of the Floridan aquifer system is greater than 250 milligrams per liter (mg/l), which is a potable (drinking) water standard. In portions of the County, the chloride condentrations are greater than 1000 mg/l (Map 13). The source of the highly mineralized water in the Floridan aquifer system is the result of saltwater contamination which occured primarily during past geologic periods.

The surficial aquifer system is the permeable hydrogeologic unit contiguous with land surface that is comprised principally of unconsolidated sediments. It also includes carbonate rocks other than those of the Floridan aquifer system, such as coquina rock deposits. Sediment and rock deposits making up the surficial aquifer system belong to all or part of the Upper Miocene to Holocene Series. It contains the water table and water within it is under mainly unconfined conditions; but beds of low permeability may cause semiconfined conditions in its deeper parts. This aquifer serves as the municipal supply for the cities of Palm Bay, Mims and Titusville, and for many other public and private potable water supplies. The surficial aquifer system is also utilized for irrigation of lawns.

Ground water recharge is the hydrogeologic process by which aquifers are replenished. Water infiltrates the land surface and eventually flows into the ground water aquifer. A recharge area is the unit of land surface in which infiltration occurs. A recharge area is not always directly above the aquifer it is recharging, but may be some distance away (St. Johns River Water Management District, October 1986). Recharge characteristics of an area are dependent upon several natural features including elevation, slope, compaction of the soils and type of soils.

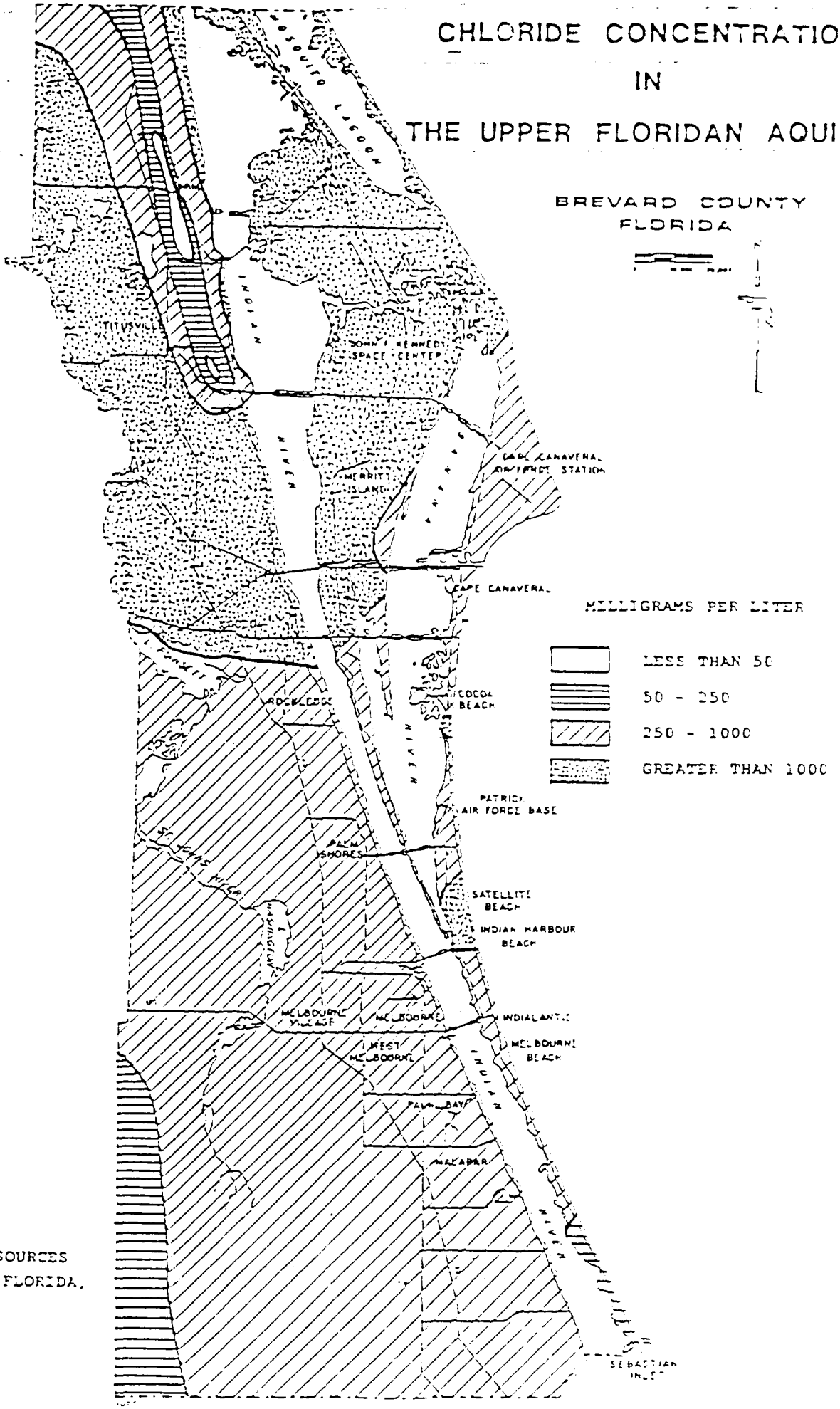
The St. Johns River Water Management District has designated prime ground water recharge areas for the Floridan aquifer system. There are no such areas designated within Brevard County. However, the County has designated recharge areas for the surficial aquifer system which serves as a water source for the cities of Mims, Titusville, and Palm Bay as well as for other public water supplies and individual wells.

SEE Brevard Co. '208 Plan' for Barrier Island - Non Point Source.

Map 13

CHLORIDE CONCENTRATION IN THE UPPER FLORIDAN AQUIFER

BREVARD COUNTY
FLORIDA



SOURCE:
WATER RESOURCES ATLAS OF FLORIDA, 1984

Reference 22

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee

To: _____ Location: _____
To: _____ Location: _____
To: _____ Location: _____
From: _____ Date: _____

Interoffice Memorandum

TO: Eric S. Nuzie, Technical Review Section, BWC

FROM: Brian M. Moore, Technical Review Section, BWC BMM

DATE: January 5, 1988.

SUBJECT: Potable wells within 3 miles of the Melbourne sludge sites.

Attached are reference materials which show location, depths, and population served for wells within 3 miles of the Melbourne sludge sites.

Private wells estimates are based on 1- service area maps and well inventory data sent by Bud Timmons (see attached) and 2- house counts were made in areas not served by public systems. Use of the shallow aquifer as the primary source for drinking was confirmed by Bud Timmons, Dr. David Toth, and driller Adger Smith (see attached). Very few people in this area drink Floridan water due to high salinity.

Closest wells were determined by conversation with Bud Timmons (see attached).

CONVERSATION RECORD

Date: 12/22/88

Time: 2:30 PM

File Name: Melbourne Sludge Sites

Contact Person: Bud Timmons

Phone No.: (Suncom 367-1515

Subject: Closest wells

By: Brian M. Moore

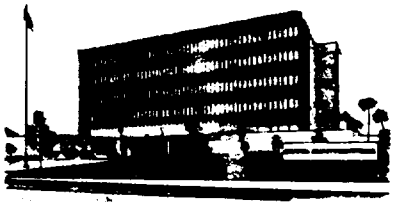
Bud Timmons relayed the following information to me regarding closest wells which he found in his USGS well inventory file.

The closest well, within 2 miles of sites 1,5,6,7 & 8 is a 68 foot deep, 1¼" domestic and irrigation well owned by Bertha West located at 719 Nevada St., Melbourne 32904. USGS # - 2803 8040 .003. Case depth is 64 feet. The well is section 12 near Minton's Corner.

Bud Timmons stated and the Melbourne Water Billing Dept. confirmed that the new development on Willowwood Dr. adjacent to Mosier's Property is not connected to city water. Recently drilled potable wells in this area are assumed to be in the shallow aquifer.

Bud Timmons also stated that within the degree/minute - 2808 8041 there are 100 wells, 48 of which are shallow, of which 42 are domestic. In the degree/minute 2809 8041 there are 143 wells, of which 56 are shallow, of which 49 are domestic.

Note: The maps sent by Bud Timmons were used to make the map - Reference 6.



BREVARD County

BOARD OF COUNTY COMMISSIONERS

OFFICE OF NATURAL RESOURCES MANAGEMENT, 2575 North Courtenay Parkway, Merritt Island, Florida 32953
Telephone: (407) 453-9515 Sun Com: 367-1515

September 28, 1988

Brian Moore
CERCLA Site Screening
Dept. of Env. Regulation
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Dear Brian:

Enclosed are public water supply maps and well inventory data for the Melbourne area in the vicinity of the 8 Preliminary Assessment Sites. Additional data is available on the geology, ambient ground water quality, and location. If you have any questions or if we can be of further assistance, please call me or Doug Divers, Environmental Resource Technician at Sun Com 367-1515.

Sincerely,

OFFICE OF NATURAL RESOURCES MANAGEMENT

Bud Timmons

Wilson R. Timmons
Environmental Analysis
Section Supervisor

WRT/cb

Enclosures

CONVERSATION RECORD

Date: 12/21/88

Time: 4pm

File Name: Mosier's Property

Contact Person: Adger Smith of Smith's Well Drilling

Phone No.: (407) 254-2446

Subject: Potable Private Wells

Mr Adger Smith who has been drilling wells in the area for about 50 years stated that in the areas between Melbourne & Palm Bay which are not served by Municipal water approximately 97% of the households would be drinking from shallow wells. The Average depth being 60 to 70 feet to the screen and the water quality is good.

Many of these houses might also have an Artesian well for irrigation.

Brian Moore

Reference 23

TECHNICAL PUBLICATION SJ 88-1

SALT WATER INTRUSION IN COSTAL AREAS OF VOLUSIA, BREVARD, AND INDIAN RIVER COUNTIES

By

David J. Toth, Ph.D

St. Johns River Water Management District
Palatka, FL

January, 1988

Brevard County

In Brevard County ground water is withdrawn from the Floridan, intermediate, and surficial aquifer systems. In the northern part of the county, wells penetrating the Floridan and surficial aquifer systems provide water for public and domestic supply. Along the Atlantic Coastal Ridge, surficial aquifer wells also supply water for heat-pump/air conditioning and lawn irrigation. In the central part of the county surficial aquifer wells are primarily used for domestic water supply. In this part of the county the number of wells that tap the Floridan aquifer increases to the east and south. The majority of withdrawals are for irrigation and heat pump use. In south Brevard County, wells penetrating the surficial, intermediate, and Floridan aquifer systems primarily withdraw water for heat pump/air conditioning and irrigation. The concentration of shallow wells exceeds 1,000 per square mile in central Melbourne. The concentration of wells penetrating the Floridan aquifer approaches this amount along the barrier islands. In southeast Brevard County the surficial aquifer also provides water for both public and domestic supply.

In 1983 a total of 205.5 MGD and 39.8 MGD was withdrawn from ground and surface water sources respectively (Marella, 1984, Revised 1986). Ground water use was primarily for agricultural irrigation (52.1%) and heat pump/air conditioning (30.6%, Figure 9). Ground water withdrawals for public supply were minimal because the City of Cocoa obtained its water from well fields in east Orange County and the City of Melbourne obtained its water from Lake Washington. Thirty percent of all surface water

SURFICIAL AQUIFER SYSTEM

The surficial aquifer system consists of materials younger than upper Miocene Age and includes well-indurated carbonate rocks, other than those of the Floridan aquifer system, that are at or near land surface. It includes the water table, shallow clastic, and shallow rock aquifers. These exist under unconfined conditions where clays and beds of low permeability are absent. In the system's deeper parts, semi-confined or confined conditions may prevail. The top of the laterally extensive and vertically persistent beds of much lower permeability in the Hawthorn Formation denote its base.

Shallow Rock Aquifer

The shallow rock zone overlies the Hawthorn Formation in Brevard and Indian River counties and is equivalent to the Tamiami Limestone of Pliocene Age. It is defined on drillers' logs and from geophysical interpretations as a water bearing hard limestone. Many municipalities such as Port Malabar, Malabar Woods, Sebastian Highlands, Bent Pines, Vero Beach, and Vero Beach Highlands withdraw water from the shallow rock zone for water supply.

Figure 19 shows the depth to the top of and areal extent of the shallow rock zone. The top of the shallow rock increases from 50 feet below mean sea level in the north and west to 100 feet below sea level at the coast near Satellite and Wabasso Beach.

HAZARD RANKING SYSTEM

DATA COLLE[illegible]N AND DOCUMEN[illegible]ON TECHNIQUES FOR HRS SCORING OF HAZARDOUS WASTE SITES

MARCH, 1987

Prepared By

NUS Corporation
Superfund Division

In Cooperation With

U.S. Environmental Protection Agency
Investigations and Compliance Unit
Regi[illegible]

Region IV Preremedial Program Guidance

Background

The Superfund Amendments and Reauthorization Act of 1986 (SARA) has required EPA to revise the Hazard Ranking System (HRS) by October 1988. In order to meet that mandate, EPA Headquarters has planned not to update the NPL after Update #7 (except for some additions of federal facilities) until the revised system (HRS2) becomes a Final Rule. Nevertheless, during FY88, EPA regions must continue to discover and evaluate sites for remedial and/or removal actions. Data, as required by HRS2, will continue to be gathered for those sites requiring remedial action. Emergency and immediate removal sites will continue to be referred to emergency personnel for appropriate action.

Preremedial Strategy

The strategy for identifying categories and priorities for sites in Region IV consists of the following:

(1) determine final disposition for sites which are not eligible for NPL listing under the present HRS (and what is known of HRS2);

(2) identify sites which could be eligible for the NPL with HRS2;

(3) identify sites which are eligible for emergency or immediate removal; and

(4) complete sampling for sites.

Sites falling under category 2 should have a preliminary HRS score of 25.0 or greater, and/or have additional HRS2 considerations...i.e., sensitive environment, substantial direct contact through food chain and/or soil contamination, potential air release, etc.

Note: This guidance is not intended to be all inclusive. Additional guidance being prepared by EPA Headquarters will be provided as it becomes available. Any questions about this guidance or guidance prepared by EPA Headquarters should be directed toward the appropriate EPA Project Officer. It should also be noted that this guidance is intended only for fiscal year 88. Additional or new guidance may be provided by Region IV or EPA HQ for use in FY89 (October 1, 1988).

A PA Update should take no more than approximately 80 hours to complete and should generally take no more than about 10-20 hours to complete. EPA is using the PA Update to make a judgement on whether or not to sample a site under an SSI. If it takes more than 80 hours to make a judgement to expend approximately 200 hours on an SSI, we have accomplished very little cost savings with the PA Update. Generally, those sites where a judgement to not sample is made (and to assign a No Further Action (NFA) disposition) will require more detailed documentation than where we plan to sample under an SSI. If the State anticipates that more than 80 hours is needed for a PA update, the EPA Project Officer should be consulted. The PA Update package must include:

1) a narrative summary which summarizes information gathered and recommends additional action if necessary;
~~2) a PA form;~~
3) a preliminary HRS score sheets; and
4) adequate documentation to support the site disposition.

Preliminary HRS Scores

After gathering data required for the PA or PA Update, a preliminary HRS score should be calculated. The preliminary HRS should depict the site under worst possible conditions, unless documentation supports that the worst conditions cannot exist. Generally, the worst possible conditions would require that a maximum toxicity/persistence score be assigned, maximum waste quantity score be assigned, and an observed release score be assigned for appropriate environmental routes. However, if the target survey shows no targets available to the groundwater route, then it is not necessary to score the groundwater route as an observed release. Similarily, if documentation clearly shows that only 5 drums of hazardous waste were disposed of on site, then it is not necessary to score the site with a maximum waste quantity. Whenever the worst possible conditions are not used, the supporting documentation must be provided to EPA in the PA Update package. If responsible party and/or state data is available, it may be used to support the preliminary HRS score and should be submitted with the PA Update.

EPA approval of PA Update

If the preliminary HRS score is greater than 25.0 and/or other HRS2 factors may allow the site to be eligible for the NPL, the EPA Project Officer must approve the site for an SSI before the State begins SSI activities (unless specific sites have been approved for an SSI in the CA). In some instances, additional documentation or clarification may be needed by EPA. In these instances, approval is not complete until all additional information is received by the EPA Project Officer. For sites scoring <25.0 that have no HRS2 considerations, sampling is not required. New sites may be substituted for these sites which were previously approved in the CA, or additional PA Updates may be negotiated with the EPA Project Officer. Only site changes approved in writing by the EPA Project Officer are acceptable.